ORDER NO. SD 7901-1507

Service Manual

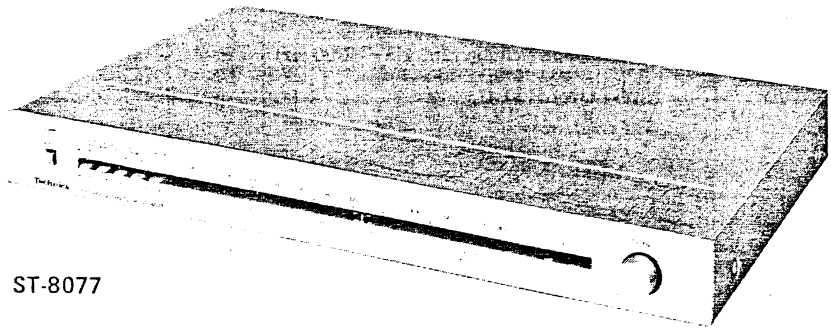
FM/AM Stereo Tuner

ST-8077

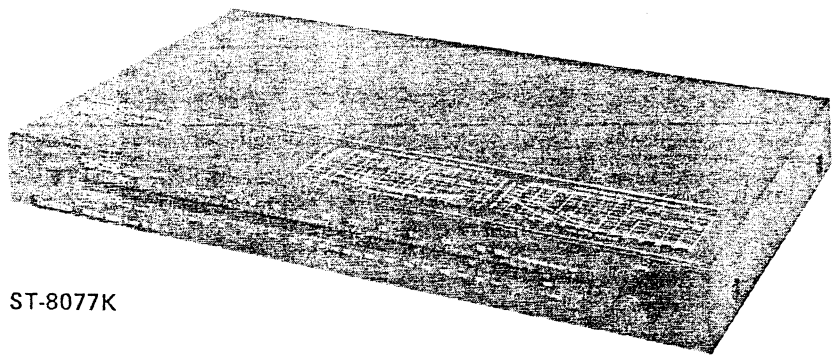
(E), (EG), (EB), (XGH), (XGF)

ST-8077K

(E), (EG), (EB), (XGH), (XE), (X), (XA), (XAL)



ST-8077



ST-8077K

* The models ST-8077 (E, EG) and ST-8077K (E, EG) are available in Scandinavia and European only.
* The models ST-8077 (EB) and ST-8077K (EB) are available in Belgium only.
* The models ST-8077 (XGH) and ST-8077K (XGH) are available in Holland only.
* The model ST-8077 (XGF) is available in France only.
* The model ST-8077K (XE) is available in United Kingdom only.
* The models ST-8077K (X, XA) are available in Asia, Latin America, Middle East and Africa only.
* The model ST-8077K (XAL) is available in Australia only.

TECHNICAL SPECIFICATIONS

Specifications are subject to change without notice for further improvement.

[DIN 45 500]

FM TUNER SECTION

Frequency range		88 ~ 108 MHz
Antenna terminals		300Ω (balanced), 75Ω (unbalanced)
Sensitivity		
S/N 30 dB		1.8μV (300Ω), 0.9μV (75Ω)
S/N 26 dB		1.6μV (300Ω), 0.8μV (75Ω)
S/N 20 dB		1.4μV (300Ω), 0.7μV (75Ω)
IHF usable sensitivity		1.9μV (IHF '58)
IHF S/N 46 dB stereo quieting sensitivity		20μV (75Ω)
Total harmonic distortion	MONO	0.08%
	STEREO	0.1%
S/N	MONO	69 dB (IHF: 75 dB)
	STEREO	65 dB (IHF: 70 dB)
Frequency response		20 Hz ~ 18 kHz, +0.1 dB ~ −0.5 dB
		±1.5 dB, 20 Hz ~ 18 kHz
Alternate channel selectivity		75 dB
Capture ratio		1.0 dB
Image rejection at 98 MHz		80 dB
IF rejection at 98 MHz		100 dB
Spurious response rejection at 98 MHz		90 dB
AM suppression		55 dB
Stereo separation	1 kHz	45 dB, 10 kHz 35 dB
Leak carrier	19 kHz	−65 dB (IHF)
	38 kHz	−65 dB (IHF)
		(−65 dB, IHF, 19/38 kHz)
Limiting point		1.2μV
Bandwidth	IF amplifier	180 kHz
	FM demodulator	1000 kHz
Channel balance (250 Hz ~ 6300 Hz)		±1 dB

AM TUNER SECTION

Frequency range	525 ~ 1605 kHz
Sensitivity (S/N 20 dB)	30μV, 250μV/m
Selectivity	40 dB
Image rejection at 1000 kHz	50 dB
IF rejection at 1000 kHz	40 dB

GENERAL

Output voltage	0.8V
Power consumption	8W
Power supply (50 Hz/60 Hz)	110V/120V/220V/240V
	240V only for Australia
Dimensions (W x H x D)	450 x 53 x 316mm
	(17 ¹¹⁄₁₆" x 2⅛" x 12⁷⁄₁₆")
Weight	4.4 kg (9.7 lb.)

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

ST-8077/K

TECHNISCHE DATEN

Spezifikationen können infolge von Verbesserungen ohne Ankündigung geändert werden.

[DIN 45 500]

UKW-TUNERTEIL

Frequenzgang		88 ~ 108 MHz
Antennenanschluss		300Ω (symmetrisch), 75Ω (unsymmetrisch)
Empfindlichkeit		
30 dB Rauschabstand		1,8μV (300Ω), 0,9μV (75Ω)
26 dB Rauschabstand		1,6μV (300Ω), 0,8μV (75Ω)
20 dB Rauschabstand		1,4μV (300Ω), 0,7μV (75Ω)
Empfindlichkeit nach IHF		1,9μV (IHF '58)
46 dB Rauschabstand utilisable Empfindlichkeit nach IHF		20μV (75Ω)
Klirrfaktor	MONO	0,08%
	STEREO	0,1%
Rauschabstand		
	MONO	69 dB (IHF: 75 dB)
	STEREO	65 dB (IHF: 70 dB)
Frequenzgang		20 Hz ~ 18 kHz, +0,1 dB ~ −0,5 dB
		20 Hz ~ 18 kHz, +1,5 dB ~ −1,5 dB
Selektivität		75 dB
Gleichwellen-Selektion		1,0 dB
Spiegelfrequenzunterdrückung bei 98 MHz		80 dB
ZF-Festigkeit bei 98 MHz		100 dB
Unselektivität-Dämpfung bei 98 MHz		90 dB
AM-Unterdrückung		55 dB
Kanaltrennung	1kHz	45 dB, 10 kHz 35 dB
Hilfsträgerdämpfung (Pilotton)		
	19 kHz	−65 dB (IHF)
	38 kHz	−65 dB (IHF)
		(−65 dB, IHF, 19/38kHz)
Begrenzungseinsatz		1,2μV
Bandbreite	ZF-Verstärker	180 kHz
	Ratiodetektor	1000 kHz
Kanalabweichung (250 Hz ~6300 Hz)		±1 dB

MW-TUNERTEIL

Frequenzgang	525 ~ 1605 kHz
Empfindlichkeit (20 dB Rauschabstand)	30μV, 250μV/m
Selektivität	40 dB
Spiegelfrequenz-Selektion bei 1000 kHz	50 dB
ZF-Festigkeit bei 1000 kHz	40 dB

ALLGEMEINE DATEN

Ausgangssapannung	0,8 V
Leistungsaufnahme	8 W
Netzspannung (50 Hz/60 Hz)	110V/120V/220V/240V
Abmessungen (B x H x T)	450 x 53 x 316 mm
Gewicht	4,4 kg

CARACTERISTIQUES TECHNIQUES

Sujet à changement sans préaris.

[DIN 45 500]

PARTIE TUNER FM

Gamme reçue		88 ~ 108 MHz
Impédance d'antenne		300Ω (symétrique) 75Ω (asymétrique)
Sensibilité		
Signal/bruit 30 dB		1,8μV (300Ω), 0,9μV (75Ω)
Signal/bruit 26 dB		1,6μV (300Ω), 0,8μV (75Ω)
Signal/bruit 20 dB		1,4μV (300Ω), 0,7μV (75Ω)
IHF Sensibilité		1,9μV (IHF '58)
IHF Sensibilité pour S/B 46 dB		20μV (75Ω)
Distorsion harmonique total		
	MONO	0,08%
	STEREO	0,1%
Signal/bruit	MONO	69 dB (IHF: 75 dB)
	STEREO	65 dB (IHF: 70 dB)
Réponse de fréquence		20 Hz ~ 18 kHz, +0,1 dB ~ −0,5 dB
		20 Hz ~ 18 kHz, +1,5 dB ~ −1,5 dB
Sélectvité en canaux alternés		75 dB
Taux de capture		1,0 dB
Réjection de fréquence image à 98 MHz		80 dB
Réjection FI à 98 MHz		100 dB
Réjection de réception non sélective à 98 MHz		90 dB
Suppression AM		55 dB
Séparation stéréophonique	1 kHz	45 dB, 10 kHz 35 dB
Courant porteur de dispersion	19 kHz	−65 dB (IHF)
	38 kHz	−65 dB (IHF)
		(−65 dB, IHF, 19/38 kHz)
Point limite		1,2μV
Largeur de bande	Amplificateur FI	180 kHz
	Démodulateur FM	1000 kHz
Equilibrage de canaux (250 Hz ~ 6300 Hz)		±1 dB

PARTIE TUNER AM

Gamme reçue	525 ~ 1605 kHz
Sensibilité (Rapport S/B 20 dB)	30μV, 250μV/m
Sélectivité	40 dB
Réjection de fréquence image à 1000 kHz	50 dB
Réjection FI à 1000 kHz	40 dB

GENERALITES

Tention de sortie	0,8 V
Consommation	8 W
Alimentation (50 Hz/60 Hz)	110V/120V/220V/240V
Dimensions (L x H x Pr)	450 x 53 x 316 mm
Poids	4,4 kg

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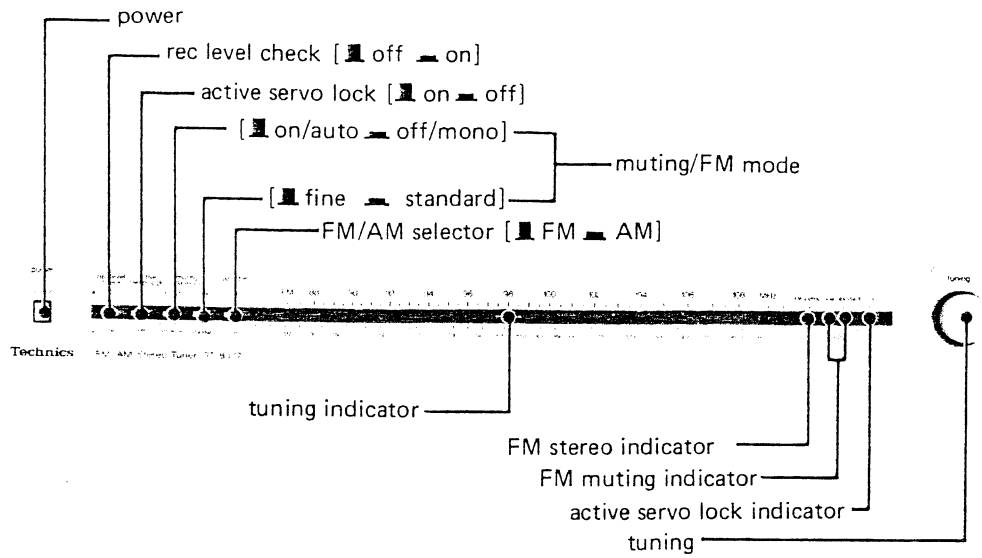
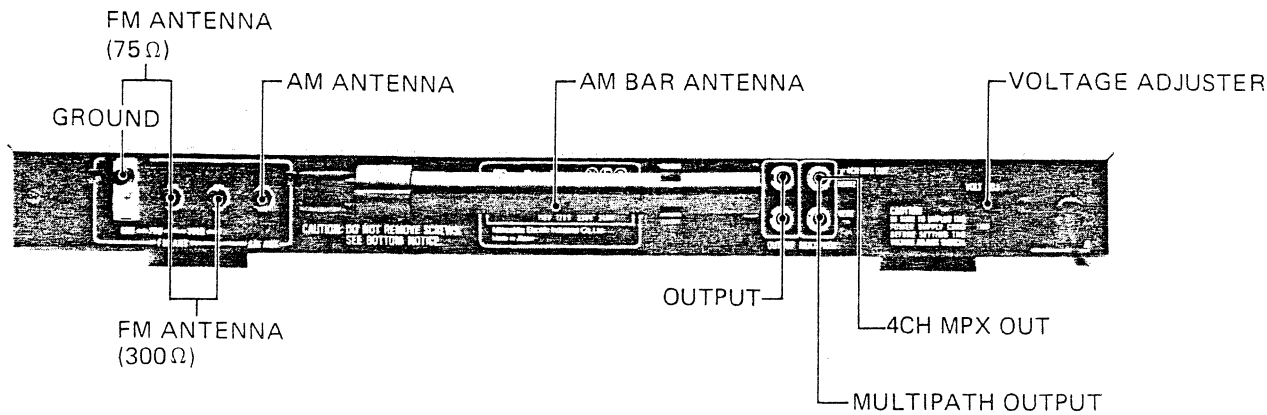
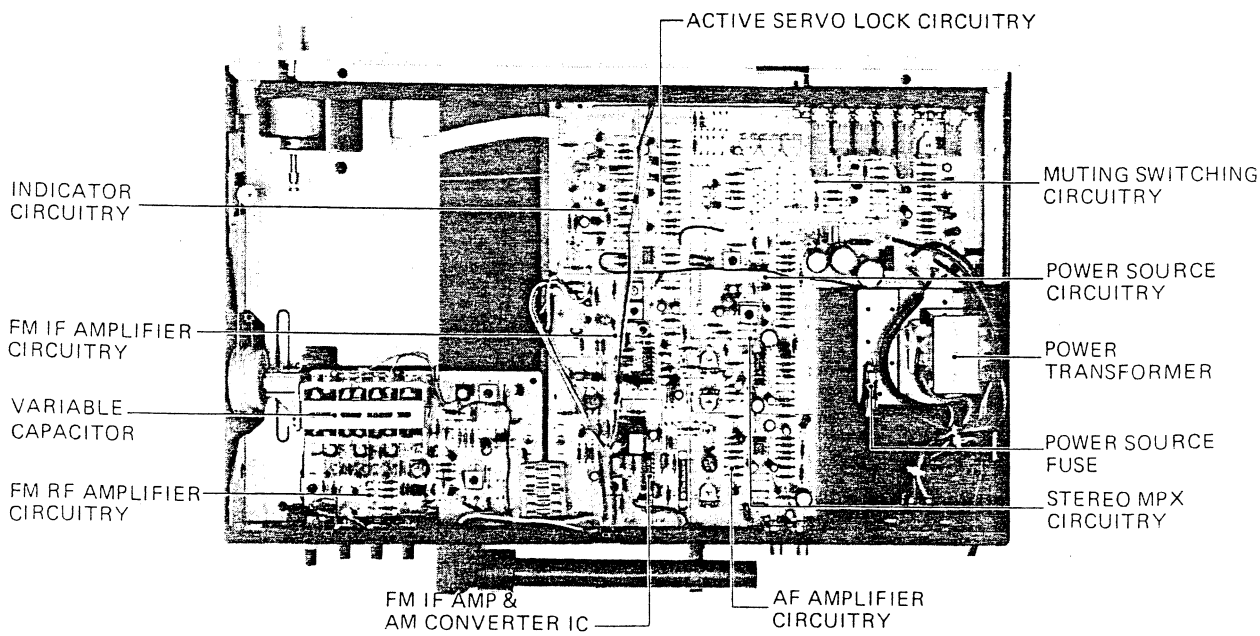
■ LOCATION OF CONTROLS







■ TECHNICAL GUIDE

(A) ACTIVE SERVO LOCK CIRCUIT

This circuit is designed to maintain the exact tuning point even in case of frequency drift in the set or at the broadcasting station.

It watches the S curve of the FM IF detector and shifts the voltage to its original level if it is deflected from the reference voltage thus keeping the set in optimum "Tuned" condition at all times.

1. No signal reception mode

IC301 is dual operational amplifier plus voltage amplifier.

A reference voltage of about 5.6V is applied from terminal ⑩ of IC102 to terminal ③ of IC301. The IF detector output voltage is fed from terminal ⑦ of IC102 to terminals ② and ⑤ of IC301. (Since this unit is a quadrature detection type, the output voltage at terminal ⑦ is about 5.6V in "No signal" and "Exact tuned" condition.)

IC301 detects the difference between the detector output voltage and the reference voltage to obtain an amplified difference voltage at terminal ① of IC301.

This voltage controls Q303 which is turned off in the "Exact tuned" and in the "No signal" mode. (Reference voltage and detector output voltage are the same.)

Q101 located near IC102 is a switching transistor to operate in accordance with the FM-IF signal level.

It is ON in the "No signal" mode as its base potential is high at that time, and it turns OFF only, when the input level of the FM-IF signal reaches a certain level.

With the active servo lock switch "ON", and Q101 "ON", both the collector voltage of Q101 and the base voltage of Q301 are 0V (ground potential), while Q301 is OFF.

Consequently, Q302 is ON, Q305 is OFF and Q304 is ON, and voltage is being applied to the variable capacity diode D1 as in Fig. 2.

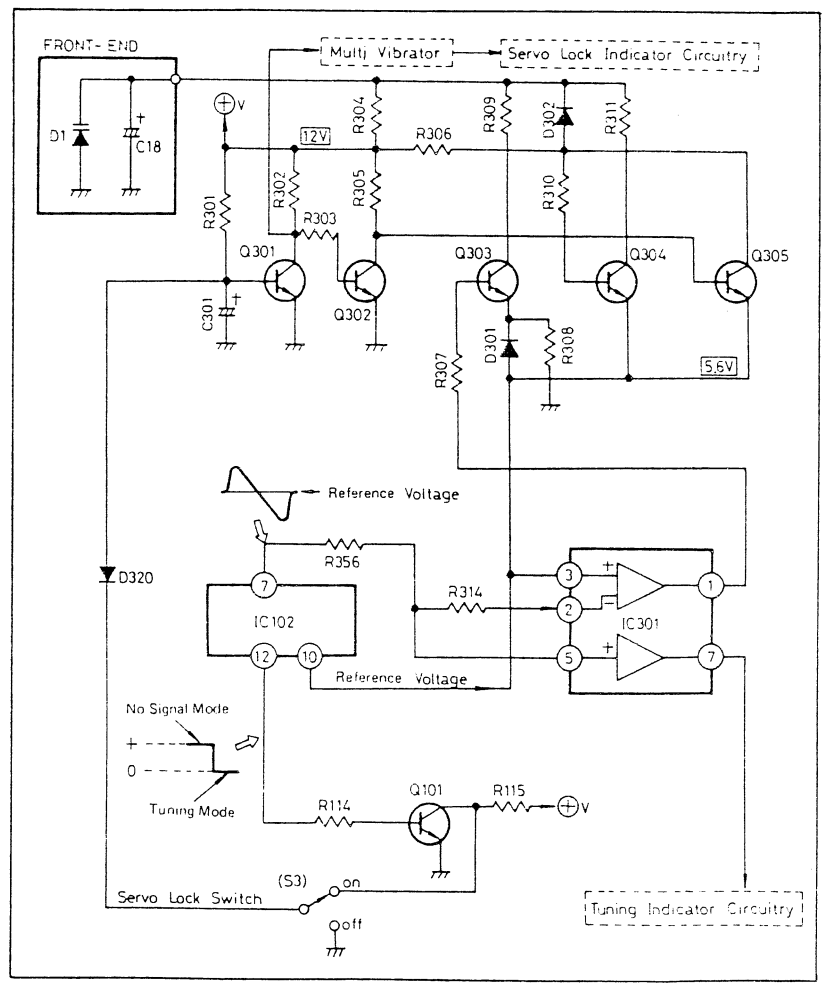


Fig. 1 (Active Servo Lock Circuitry)

2. Signal reception mode

As explained above, Q101 turns OFF when a signal is received, causing the collector voltage to rise. D320 is reverse-biased and current stops to flow. In other words, the base of Q301 is electrically disconnected from the collector of Q101.

This causes C301 to be charged through R301. About 3 or 4 seconds later, Q301 turns ON and the servo lock circuit starts to operate.

At the same time, the collector potential of Q301 which dropped to 0V turns the multi-vibrator's Q318 OFF and Q321 ON.

Then, servo lock indicators D325 and D326 light up.

When Q301 is ON, then Q302 is OFF, Q305 is ON and Q304 is OFF and a constant voltage is applied to D1 as shown in Fig. 3.

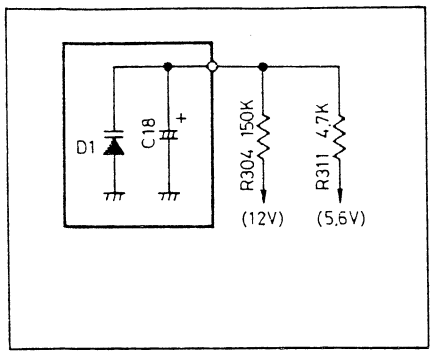


Fig. 2
(No Signal Mode)

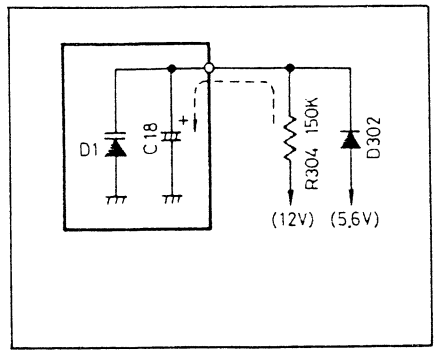


Fig. 3
(Exact Tuning & Deviation to Lower Frequency)

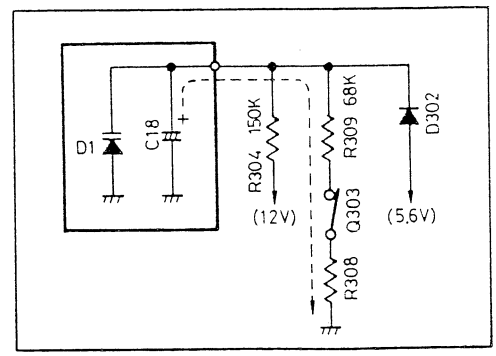


Fig. 4
(Deviation To Higher Frequency)

3. Deviation to higher frequency

If the frequency is deflected upward, the FM-IF detector output voltage (voltage at IC102 terminal ⑦) drops, while the output voltage at terminal ① of IC301 rises above the reference voltage (5.6V). Then Q303 turns ON, resulting in the circuit as shown in Fig.4. The voltage across D1 drops, causing the capacity to increase and the frequency of the local oscillator circuit to become lower, thus shifting the frequency back to the correct tuning point.

4. Deviation to lower frequency

If the frequency is deflected to the lower side, the if detector voltage goes up, dropping the output voltage at terminal 1 of IC301 below the reference level and Q303 turns OFF. C18 starts to charge up (see fig. 3). The voltage across D1 increases, capacity of D1 decreases, which causes the oscillator frequency to go up to the corrent tuning point.

MODE	Q101	Q301	Q302	Q305	Q304	Q303	C18	D1 (CAPACITY
NO SIGNAL	ON	OFF	ON	OFF	ON	OFF	FULLY CHARGED	CONSTAN
EXACT TUNING	OFF	AFTER 3 SEC ON	AFTER 3 SEC OFF	AFTER 3 SEC ON	AFTER 3 SEC OFF	OFF	FULLY CHARGED	CONSTAN
FREQUENCY IS HIGHER	OFF	ON	OFF	ON	OFF	ON	DISCHARGING	↑ UP
FREQUENCY IS LOWER	OFF	ON	OFF	ON	OFF	OFF	CHARGING	↓ DOWN

(B) TUNING INDICATOR CIRCUIT

This circuit is designed to activate the arrow shaped indicator LED'S (▶◀) in place of conventionally employed meters. Since the circuit is interlocked with the active servo lock circuit, it is necessary to be familiar with the active servo lock circuit.

1. No signal mode

As explained in section A-1 "Active servo lock circuit", Q101 is ON in "no signal" mode. Therefore Q309 is OFF. This is important. Also remember that Q301 in the active servo lock circuit is OFF in "no signal" mode.

At that time, a positive voltage is applied to the collector of Q301, and this voltage is fed to D316 of the multi-vibrator. However no current will flow to the base of Q318 because D316 is reverse-biased.

Accordingly, Q318 turns ON and its collector drops to 0V (emitter potential). This potential appears at the base of Q310 and Q311 through D315, turning both transistors OFF.

Therefore, the tuning indicator lights up (▶|◀).

2. Exact tuning

The output voltage from terminal ⑦ of IC301 (see fig. 5) is applied to point A, causing Q306 and Q307 to turn ON. Q308 turns ON when Q306 is turned ON. Also, in exact tuning mode Q101 is OFF as previously explained.

When Q101 is OFF, Q309 is ON, and accordingly, the collectors of Q307 and Q308 drop to 0V (ground potential), and the arrow tuning indicators go out and only the pointer indicator remains illuminated.

3. Deviation to lower frequency

The voltage at terminal ⑦ of IC301, that is, the voltage at point A increases. D303 looses its Zener effect and Q306 turns OFF as it is not biased. When Q306 is OFF, Q308 is OFF, too.

Therefore,the ▶ shaped indicator D307 lights up.

In signal reception mode, Q101 is OFF the same as in exact tuning mode. So, the collector voltage is applied to the multi-vibrator through the active servo switch.

Then the multi-vibrator (Q318, Q319) continues to turn ON and OFF, causing the collector voltage of Q318 to become alternately positive and ground potential (0V).

The change of voltage turns Q321 ON or OFF and the servo lock indicator repeats flashing. At the same time, both Q311 and Q310 alternately turn ON and OFF causing the arrow shaped indicator to flash.

As explained in section A-2 "Active servo lock circuit", D320 is reversely biased in the signal reception mode, and electrically disconnected from Q301. C301 which is connected to the base of Q301 starts to charge up.

About 3 or 4 seconds later, Q301 turns ON and the collector voltage drops to ground potential (0V), causing the servo lock indicator to light up. Simultaneously, the servo lock circuit operates to shift the frequency back to the exact tuning point. Then, the ▶-mark indicator D307 goes out.

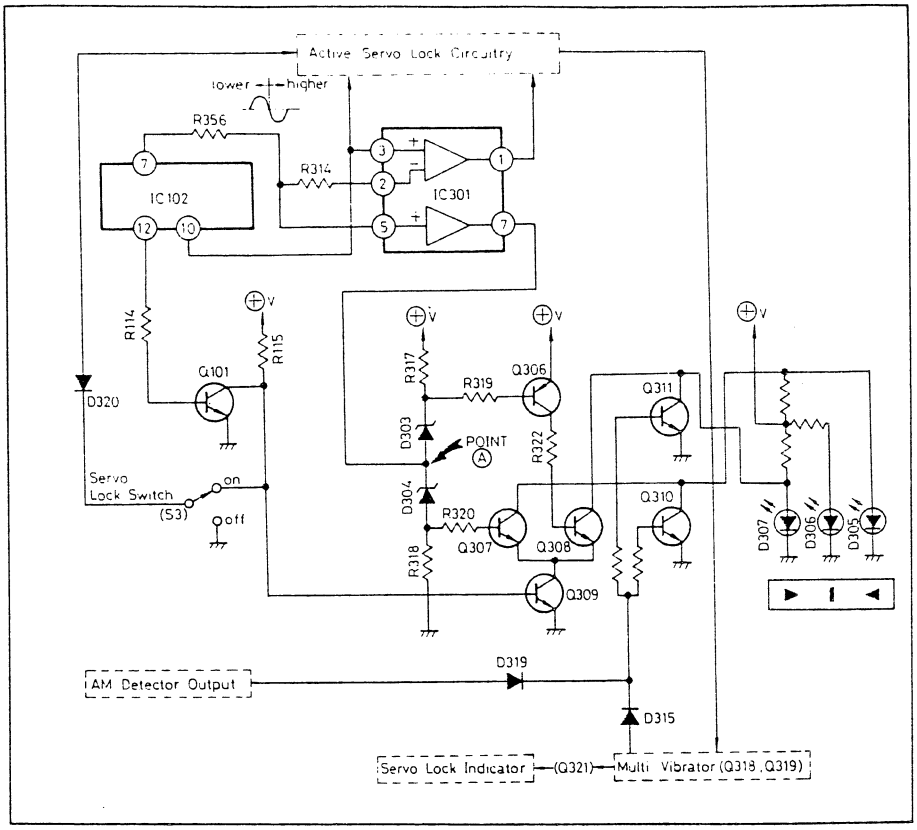


Fig. 5 (Tuning Indicator Circuit)

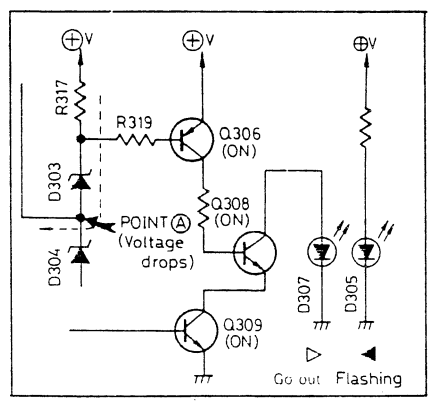


Fig. 6 (Deviation To Higher Frequency)

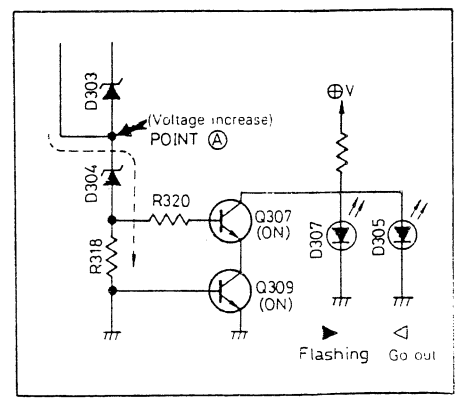


Fig. 7 (Deviation To Lower Frequency)

4. Deviation to higher frequency

This time, the voltage at point A drops, D304 looses its Zener effect and Q307 turns OFF. Conversely the Zener effect of D303 increases causing Q306 to be biased and Q306 turns ON. Subsequently, Q308 turns ON. Then the ◀ -mark indicator D305 repeats flashing. The principle is the same as for the ▶-mark indicator D307 explained in section 3 "Deviation to lower frequency".

5. AM reception

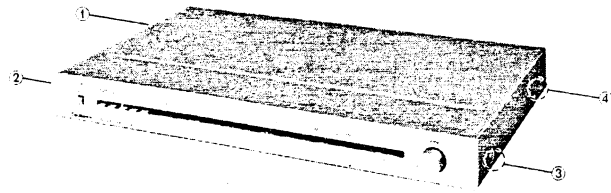
The operation of the active servo lock is the same as in no signal mode.

The AM detector output voltage is fed to Q310 and Q311 via D319. When the AM detector output voltage increases, both Q310 and Q311 turn ON, and the arrow mark indicators D305 and D307 go out.

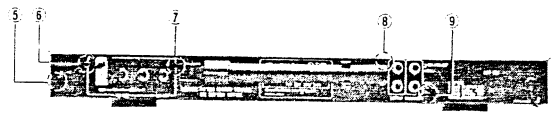
MODE	Q101	Q301	Q306	Q308	Q307	Q309	Q310	Q311	Q321	TUNING INDICATOR	SERVO INDICATOR
NO SIGNAL	ON	OFF	ON	ON	ON	OFF	OFF	OFF	OFF	▶|◀	
EXACT TUNING	OFF	AFTER 3 SEC ON	ON	ON	ON	ON	ON	ON	ON	|	LIGHT UP
FREQUENCY IS LOWER	OFF	ON	OFF	OFF	ON	ON	ON↔OFF	ON↔OFF	OFF↔ON	▶|	FLASHING
FREQUENCY IS HIGHER	OFF	ON	ON	ON	OFF	ON	ON↔OFF	ON↔OFF	OFF↔ON	|◀	FLASHING
A. M.	ON	OFF	ON	ON	ON	OFF	ON	ON	OFF	|	

HOW TO REMOVE THE CHASSIS

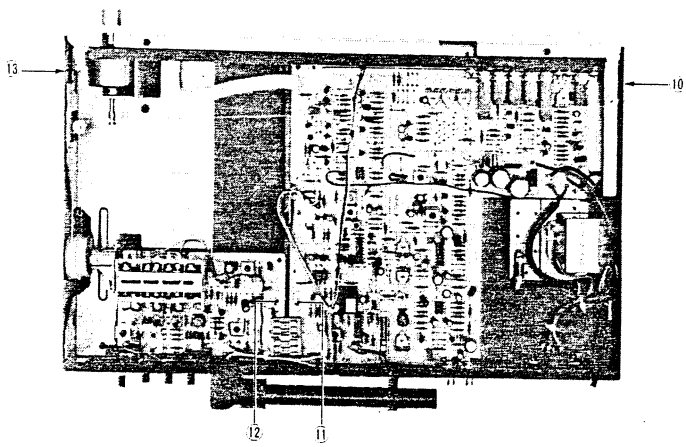
1. Detach the top board by removing the 4 setscrews (①~④ in Photo 1).
2. Remove the 5 setscrews (⑤~⑨ in Photo 2) used to secure the rear panel, antenna terminal and output terminal.
3. Remove the 4 setscrews (⑩ ~ ⑬ in Photo 3) of the printed circuit board, and the setscrew (⑭ in Photo 4) which fastens the front panel from the bottom board.
4. Cut off the cord clamper used to secure the power supply cord and transformer lead wire by means of a nipper or the like.
5. Raise the printed circuit board, being careful of the lead wires. (Photo 4)
6. After completion of the repair, assemble the parts by reversing the procedure 1 ~ 5.
   Incidentally, a new cord clamper should be used.



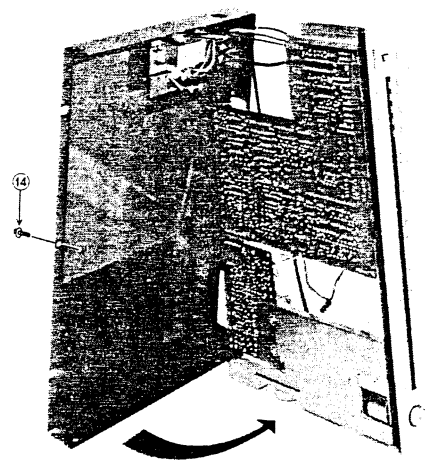
[PHOTO 1]



[PHOTO 2]



[PHOTO 3]

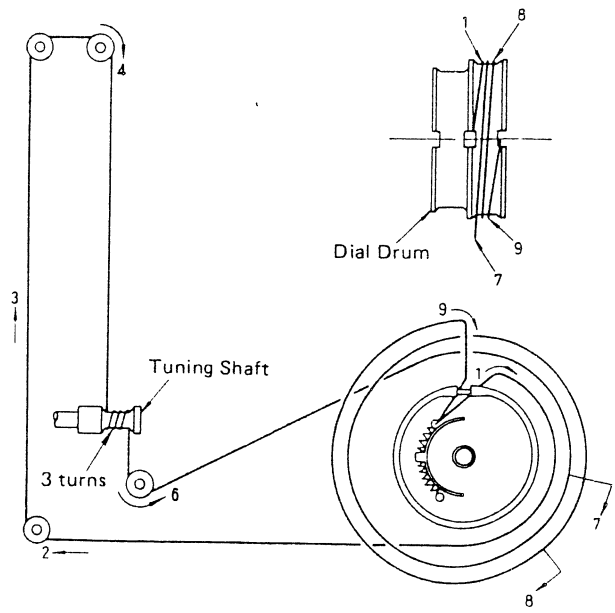


[PHOTO 4]

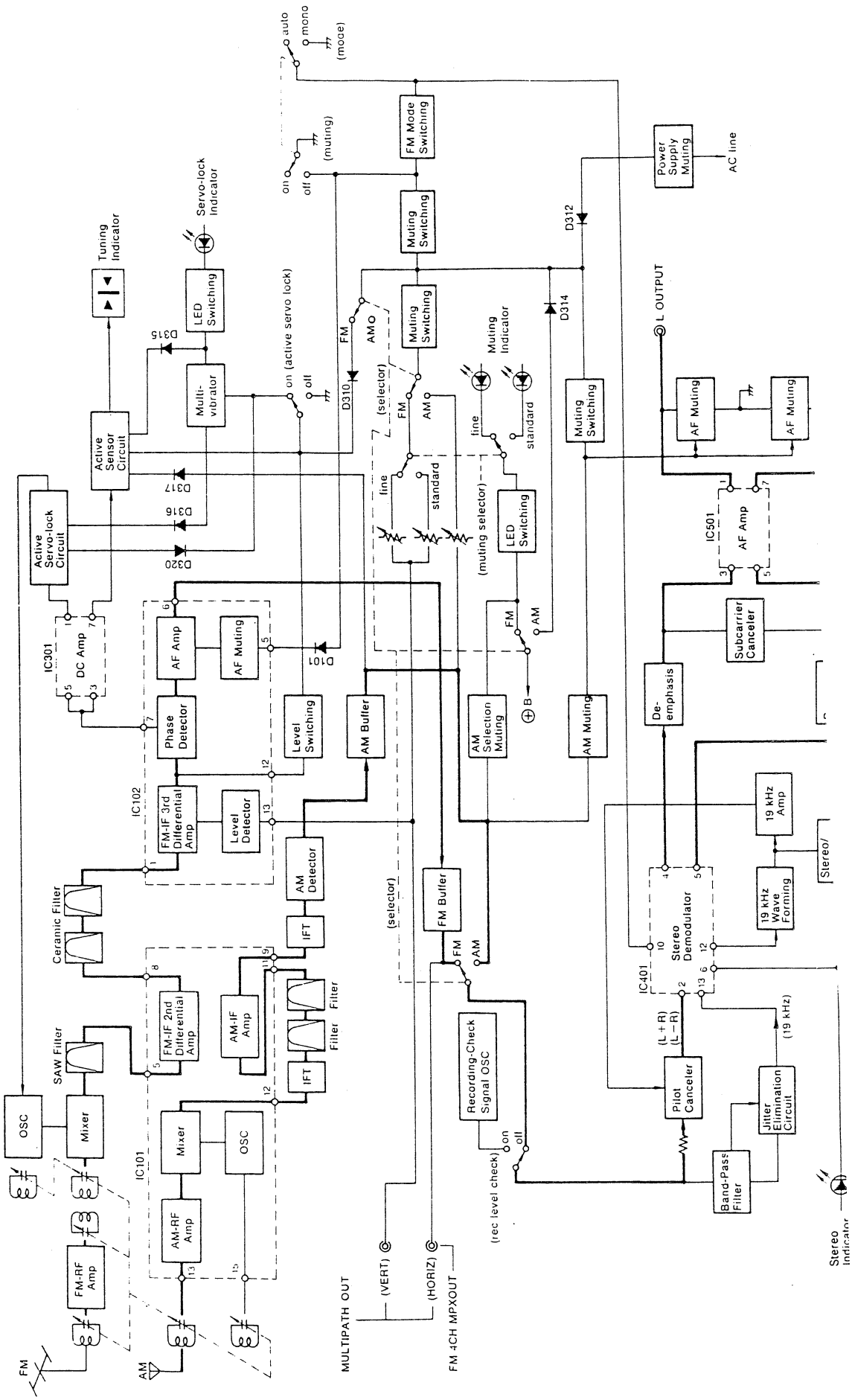
DIAL CORD INSTRUCTION GUIDE

- For threading a fresh cord, proceed as follows.

1. Prepare a fresh cord more than 180 cm (70-15/16") in length.
2. Bring the variable capacitor into a state where the drum is completely turned to the right (maximum capacity and lowest frequency for the variable capacitor).
3. Direct the cord in the order from 1 to 9.
4. Stretch the cord in such a tension as the spring length is elongated by 1.5 times that of the original state.
5. Fix the knot of the cord with the bond.

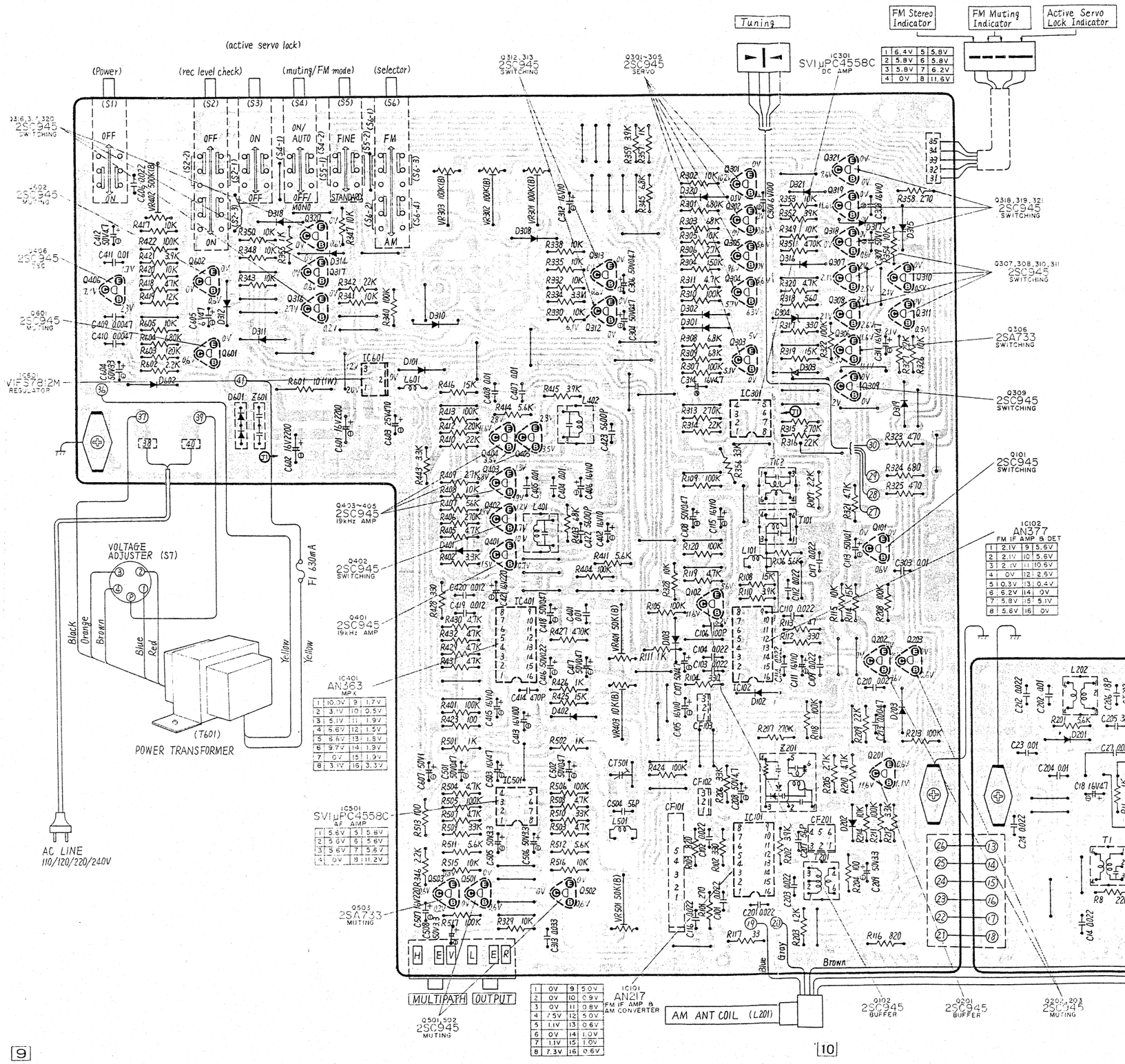


BLOCK DIAGRAM

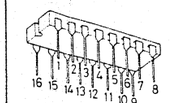
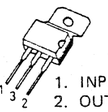
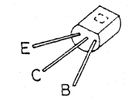
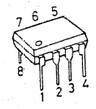
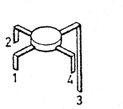


I PRINTED CIRCUIT BOARD WIRING VIEW

Earth (Ground) Lines



■ TERMINAL GUIDE OF TRANSISTOR AND IC

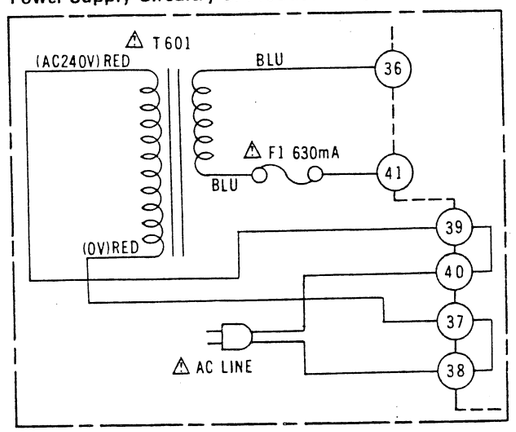
AN217, AN377, AN363	SVIFS7812M	2SC1047, 2SC1675 2SC945, 2SA733
	 1. INPUT 2. OUTPUT 3. COMMON	 E C B
SVIμPC4558C	3SK74	
	 1. GATE 2. GATE 3. DRAIN 4. SOURCE	

Notes:

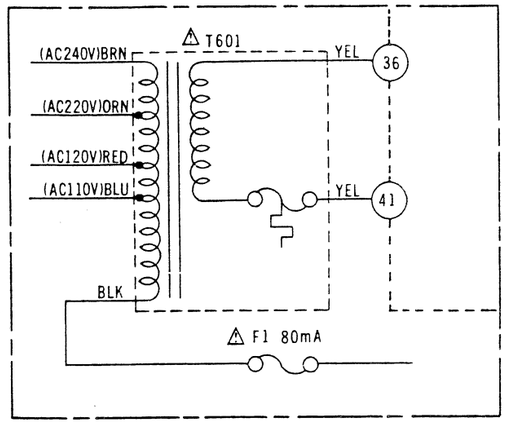
1. **S1:** Power source switch in "**on**" position.
2. **S2-1 ~ 2-3:** Rec level check switch in "**off**" position.
   on ⟷ off
3. **S3:** Active servo lock switch in "**on**" position.
   on ⟷ off
4. **S4-1, 4-2:** Muting/FM mode switch in "**on/auto**" position.
   on/auto ⟷ off/mono
5. **S5-1, 5-2:** Station selector switch in "**fine**" position.
   fine ⟷ standard
6. **S6-1 ~ 6-4:** Selector switch in "**FM**" position.
   FM ⟷ AM
7. **S7:** Voltage adjuster switch in **"240V"** position.
8. Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
   [ ] Voltage during FM monaural or non-signal reception,
   ( ) Voltage during FM stereo reception.
   ⌜ ⌟ Voltage during muting ON. servo ON.
   (With muting switch set to ON, a bias is applied to the switching transistor of muting circuit so that the output comes out in case of over 18 dB antenna input and is grounded when the input is less than 17 dB.)
9. Signal lines FM ⇨ AM ➡ AF
10. To represent transistors. **Q** is used instead of **TR** (Ex. TR1 → Q1)
11. ⚠ indicates that only parts specified by the manufacturer be used for safety.

■ POWER SUPPLY CIRCUITRY

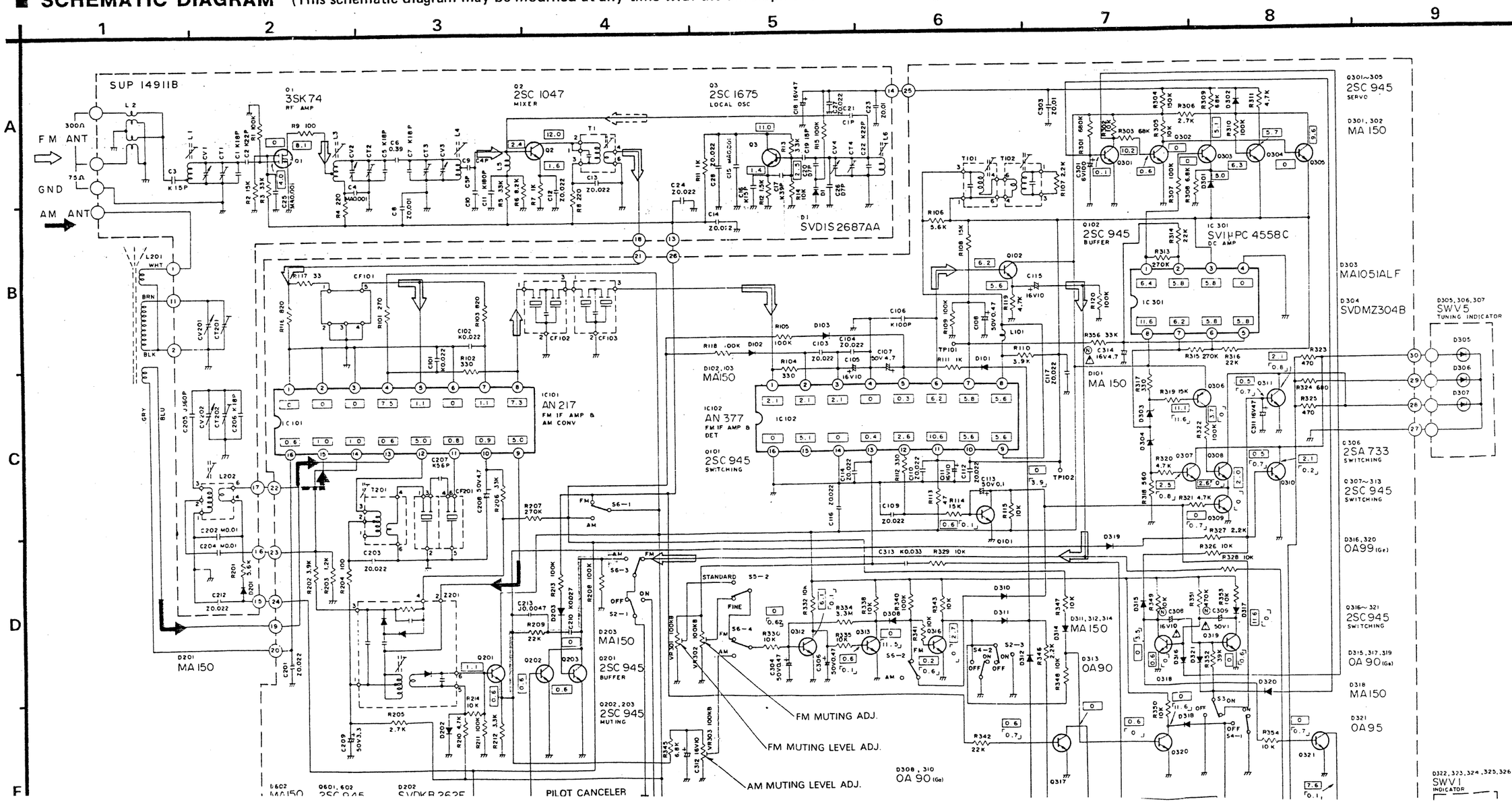
• Power Supply Circuitry of Product For [XAL] only.

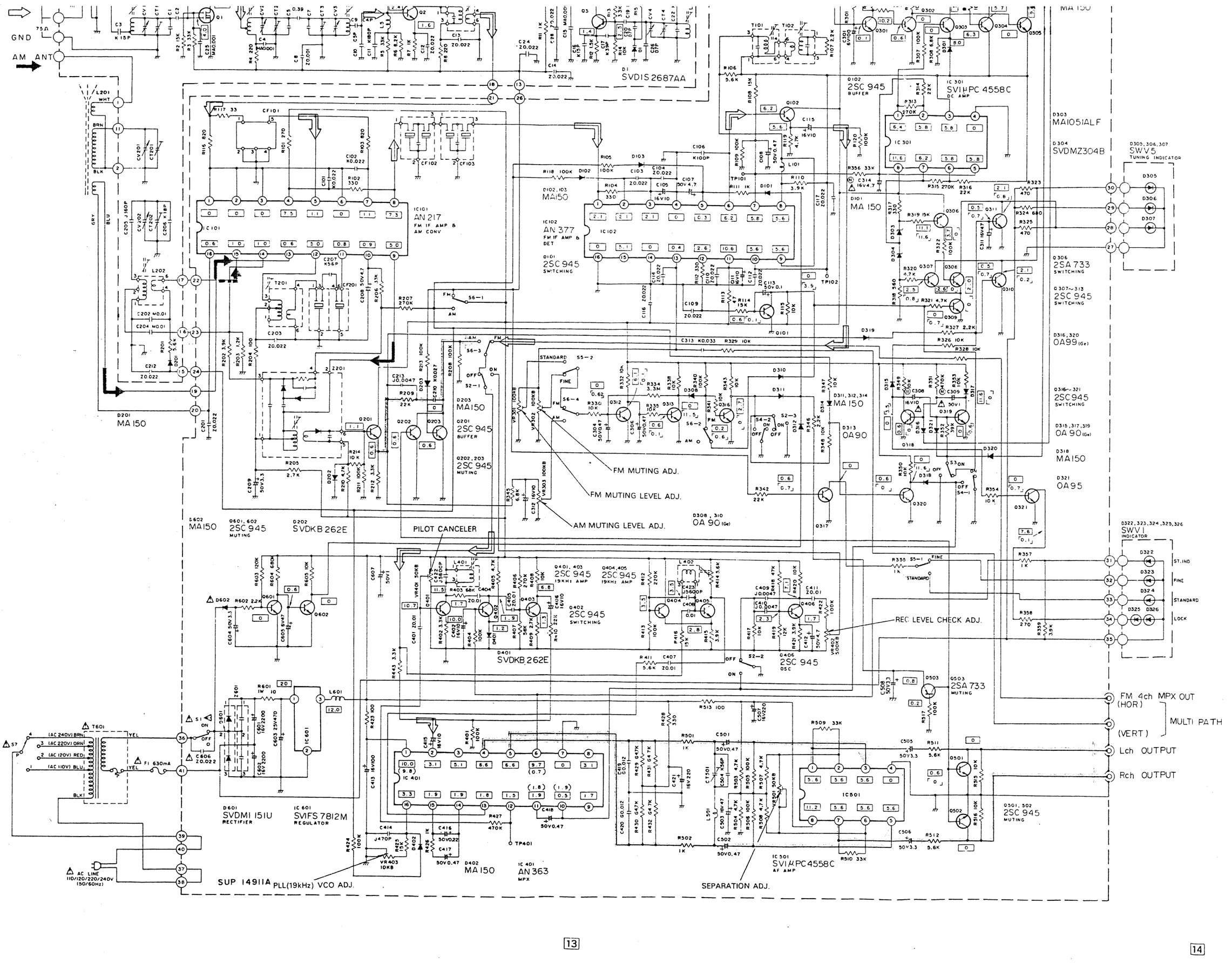


• Power Supply Circuitry of Product For [XE] only.



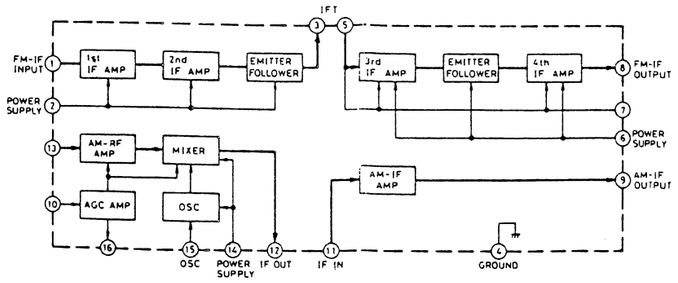
■ SCHEMATIC DIAGRAM (This schematic diagram may be modified at any time with the development of new technology.)



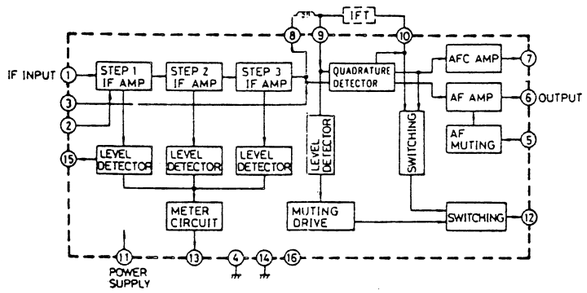

GND
75Ω
AM ANT
L201
WHT
BRN
BLK
GRY
BLU
D201 MA150
IC101 AN 217 FM IF AMP & AM CONV
IC102 AN 377 FM IF AMP & DET
Q101 2SC 945 SWITCHING
D101 MA 150
D102,103 MA150
Q102 2SC 945 BUFFER
IC 301 SVIμPC 4558C DC AMP
D303 MA1051ALF
D304 SVDMZ304B
D305,306,307 SWV5 TUNING INDICATOR
Q306 2SA 733 SWITCHING
Q307~313 2SC 945 SWITCHING
D316,320 0A99(Ge)
Q316~321 2SC945 SWITCHING
D315,317,319 0A 90(Ge)
D318 MA150
D321 0A95
D319
D311,312,314 MA 150
D313 0A90
D310
D308,310 0A 90(Ge)
Q201 2SC 945 BUFFER
Q202,203 2SC 945 MUTING
D203 MA150
D202 SVDKB 262E
PILOT CANCELER
FM MUTING ADJ.
FM MUTING LEVEL ADJ.
AM MUTING LEVEL ADJ.
D602 MA150
Q601,602 2SC 945 MUTING
Q401 2SC 945 SWITCHING
Q403,404 2SC 945 19KHz AMP
Q404,405 2SC 945 19KHz AMP
Q402 2SC 945 SWITCHING
D401 SVDKB 262E
REC LEVEL CHECK ADJ.
Q406 2SC 945 OSC
Q503 2SA 733 MUTING
D322,323,324,325,326 SWV1 INDICATOR
ST.IND
FINE
STANDARD
LOCK
T601
(AC 240V) BRN
(AC 220V) ORN
(AC 120V) RED
(AC 110V) BLU
YEL
BLK
F1 630mA
AC LINE 110/120/220/240V (50/60Hz)
D601 SVDMI 151U RECTIFIER
IC 601 SVIFS 7812M REGULATOR
IC 401 AN363 MPX
SUP 14911A PLL(19kHz) VCO ADJ.
SEPARATION ADJ.
IC501 SVIμPC4558C AF AMP
Q501,502 2SC 945 MUTING
FM 4ch MPX OUT (HOR)
(VERT)
MULTI PATH
Lch OUTPUT
Rch OUTPUT

■ BLOCK DIAGRAM OF INTEGRATED CIRCUITS

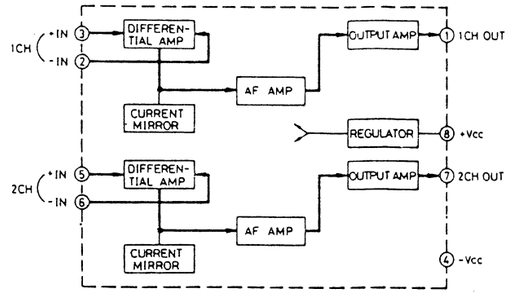
- This is the basic block diagram of the inside circuit of IC. In an actual circuit, there may be sometimes idle terminals or some different functions other than the basic circuit.



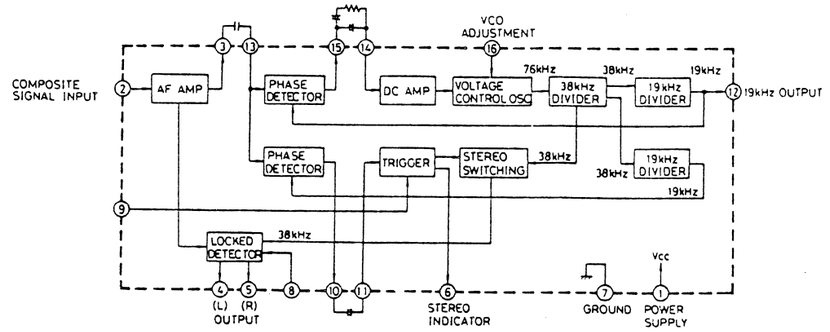
IC101 (AN217) FM IF Amplifier & AM converter



IC102 (AN377) FM IF Amplifier & Detector

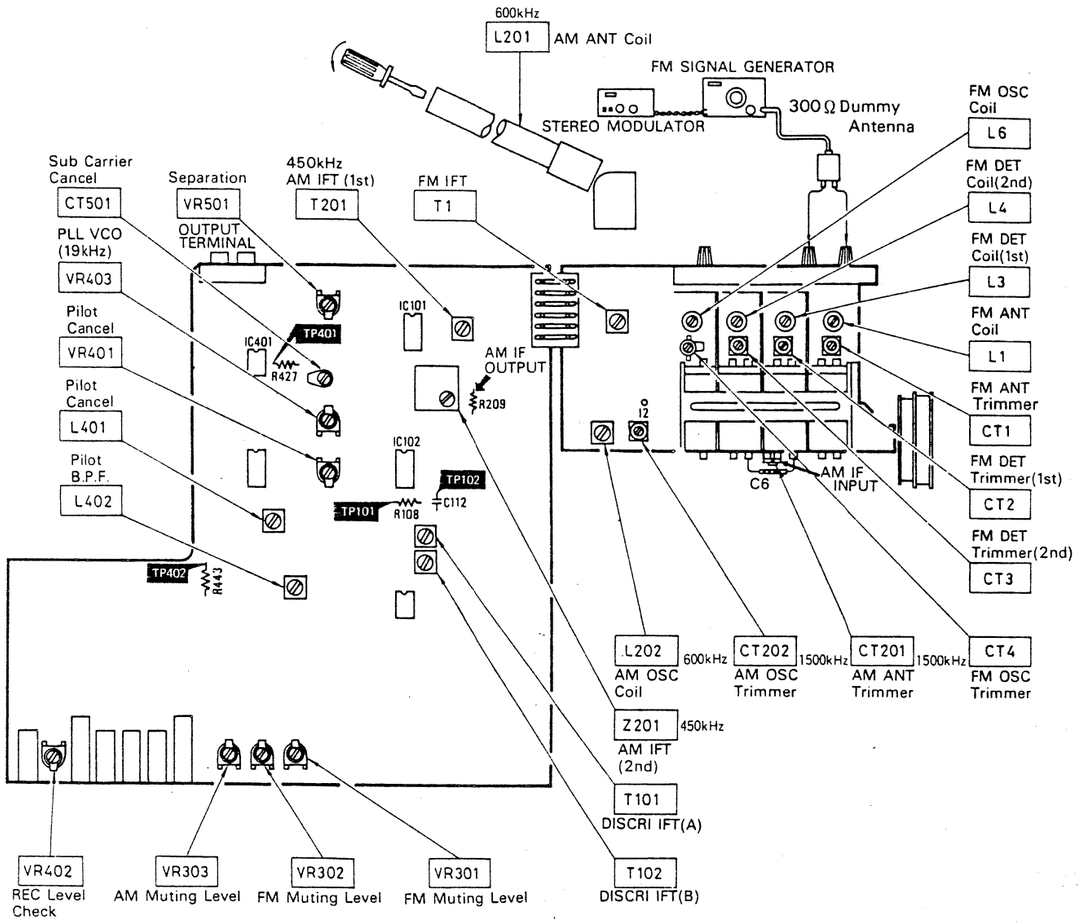


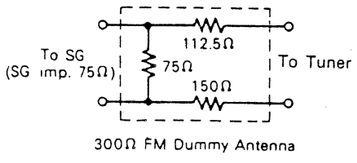
IC301, 501 (SVIUPC4558C) DC & AF Amplifier



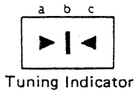
IC401 (AN363) Multiplex

■ ALIGNMENT POINTS

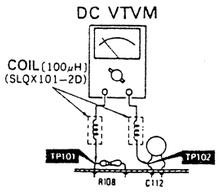




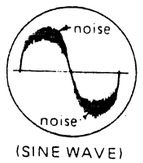
[Fig. 8]
Abb. 8



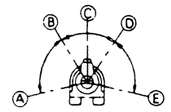
[Fig. 9]
Abb. 9



[Fig. 10]
Abb. 10

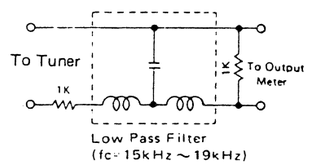


[Fig. 11]
Abb. 11



A – B, D – E: Stereo OFF Position.
B – D: Stereo ON Position (Indicator Lighting)
C: Adjust Point of Pilot Circuit.

[Fig. 12]
Abb. 12



[Fig. 13]
Abb. 13

■ ALIGNMENT INSTRUCTIONS ENGLISH

Notes:
1. Band selector switch ..... {AM (AM Alignment) / FM (FM Alignment)}
2. FM muting & mode switch..... off/mono
3. Active servo lock switch..... off
4. Maintain line voltage at 120 volts.
5. 300Ω FM dummy antenna ..... Refer to fig. 8
6. Output of signal generator should be on higher than necessary to obtain an output reading.
7. Adjust the antenna coil (L201) position by suing a screwdriver so that it is at approximately 25 degrees to the rear panel.

	AM/FM SIGNAL GENERATOR CONNECTION	AM/FM SIGNAL GENERATOR FREQUENCY	DIAL SETTING	INDICATOR (VTVM or SCOPE)	ADJUSTMENT POINTS	REMARKS
	AM ALIGNMENT					
1	High side through 0.022μF to AM antenna trimmer terminal. Common to chassis.	450kHz (30% Mod. with 400 Hz)	Point of non-inter-ference	Connect AC VTVM or scope to "OUTPUT" terminals.	T201 (1st IFT) Z201 (2nd IFT)	Adjust for maximum output.
2	Fashion loop of several turns of wire and radiate signal into loop of tuner	600kHz (30% Mod. with 400 Hz)	600kHz	Connect AC VTVM or scope to "OUTPUT" terminals.	L202 (OSC Coil) L201 (ANT Coil)	Adjust for maximum output, Adjust ferrite core of L201 by screw driver.
3	Fashion loop of several turns of wire and radiate signal into loop of tuner	1500kHz (30% Mod. with 400 Hz)	1500kHz	Connect AC VTVM or scope to "OUTPUT" terminal.	CT202 (OSC Trimmer) CT201 (ANT Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).
	AM MUTING LEVEL ALIGNMENT					
4		1500kHz (30% Mod. with 400Hz)	1500kHz		VR303 (AM MUTING LEVEL)	1. Set the muting/FM mode switch to "off/mono". 2. Apply 1500kHz (400Hz 30%) signal to the set, then tune in 1500kHz, and set the input to a level where the tuning indicators on both sides (Fig. 9, a & c) turn off. 3. Set the muting/FM mode switch to "on/auto". 4. Adjust VR303 so that the output is given with muting condition released. 5. Lower the input until muting is effected, then slowly increase the input and make sure that the output is given synchronizing with turning off of the tuning indicators.
	FM IF ALIGNMENT					
5		No-Signal	Point of non-inter-ference	Connect DC VTVM to TP1, TP2 terminals (Refer to fig. 10)	T101 (DISCRI IFT) A	1. FM muting/mode switch "on/auto" position. 2. Adjust T101 (A) core so that voltage measured in signal mode is 0V in 300mV range.
	FM RF ALIGNMENT					
6	Connect to FM 300Ω antenna terminal through 300Ω. FM dummy antenna.	90MHz (100% Mod. with 400Hz) weak input	90MHz	Connect scope to "OUTPUT" terminal.	L6 (OSC Coil) L3 (RF DET Coil, 1st) L4 (RF DET Coil, 2nd) L1 (ANT Coil)	1. Add weak input so that noise is included in the output wave form. 2. Make the adjustment so that the output wave form is vertically symmetrical. Refer to fig. 11. 3. Repeat the steps (6) and (7) until the frequency correctly matches the dial scale.
7		106MHz (100% Mod. with 400Hz)	106MHz	Connect scope to "OUTPUT" terminal.	CT4 (OSC Trimmer) CT2 (RF DET Trimmer, 1st) CT3 (RF DET Trimmer, 2nd) CT1 (ANT Trimmer) T1 (FM IFT)	
	FM MONO DISTORTION ALIGNMENT					
8	Connect to FM 300Ω antenna terminal through 300Ω FM dummy antenna.	100MHz (100% Mod. with 400Hz)	100MHz	Connect distortion meter to "OUTPUT" terminals.	T102 (DISCRI IFT) B	1. Set the FM muting/mode switch to "on/auto" and then check step (5) in no signal mode. 2. If it is deflected, re-adjust A (primary side) of T101. 3. Adjust T101 (B) core so that distortion of right and left channels are minimized.

	AM/FM SIGNAL GENERATOR		DIAL SETTING	INDICATOR (VTVM or SCOPE)	ADJUSTMENT POINTS	REMARKS
	CONNECTION	FREQUENCY				
FM MUTING LEVEL ALIGNMENT						
9	Connect to FM 300Ω antenna terminal through 300Ω FM dummy antenna. Apply 22dB (12.6μV) to tuner	100MHz (100% Mod. with 400Hz)	100MHz		VR301 (MUTING LEVEL)	1. Set the muting/FM mode switch to "off/mono" and the muting level change-over switch to "standard", and then tune in 100MHz. 2. With the muting/FM mode switch set to "on/auto", adjust VR301 so that the output is given with muting condition released.
10	Connect to FM 300Ω antenna terminal through 300Ω FM dummy antenna. Apply 46dB (200μV) to tuner.	100MHz (100% Mod. with 400Hz)	100MHz		VR302 (MUTING LEVEL)	1. Set the muting/FM mode switch to "off/mono" and the muting level change-over switch to "fine", and then tune in 100MHz. 2. With the muting/FM mode switch set to "on/auto" adjust VR302 so that the output is given with muting condition released.
FM MPX PILOT ALIGNMENT						
11	USING A FREQUENCY COUNTER 1. 100MHz Non-modulated mono signal applied to set. 2. FM muting/mode switch to "on/auto" 3. Connect frequency counter to TP401 through resistor (100kΩ). 4. Adjust VR403 to 19kHz, ±30Hz.			USING ALTERNATE SYSTEM 1. Apply stereo signal from generator or stereo station to tuner. 2. Adjust VR403 until stereo indicator lights up. Cement arm of VR403 as shown in fig. 12.		
PILOT BANDPASS FILTER ALIGNMENT						
	FM SIGNAL GENERATOR		DIAL SETTING	INDICATOR	ADJUSTMENT POINTS	REMARKS
	CONNECTION	FREQUENCY				
12	Connect to FM 300Ω antenna terminal through 300Ω FM dummy antenna.	100MHz [400Hz (L or R) 90%, Pilot 10% modlation]	100MHz	Connect the distortion meter to the output terminal of the set through low pass-filter (Refer to fig. 13)	L402 (PILOT B.P.F)	1. Adjust L402 to that the output is maximum. 2. Adjust L402 once again so that the distortion of the output of L channel is minimized.
PILOT CANCEL ALIGNMENT						
13	Connect to FM 300 antenna terminal through 300Ω FM dummy antenna.	100MHz (Pilot 10% Mod. 60dB stereo non-modulation)	100MHz	Connect AC VTVM or scope to TP402 terminal.	VR401 (PILOT CANCEL) L401 (PILOT CANCEL)	1. Repeat adjustment of VR401 and L401 to bring the output (19kHz) to minimum.
SUBCARRIER CANCEL ALIGNMENT						
14	Connect to FM 300Ω antenna terminal through 300Ω FM dummy antenna.	100MHz (Pilot 10% Mod. 60dB stereo non-modulation)	100MHz	Connect AC VTVM or scope to output terminal.	CT501 (SUBCARRIER CANCEL)	1. Adjustment of CT501 to bring the output to minimum.
SEPARATION ALIGNMENT						
15	Connect to FM 300Ω antenna terminal through 300Ω FM dummy antenna.	100MHz (1kHz 30%, Pilot 10% modulation 60dB stereo signal)	100MHz	Connect AC VTVM to output terminal (L or R) through low pass filter (Refer to fig.13)	VR501 (SEPARATION ALIGNMENT)	1. Set the FM muting/mode switch to "on/auto", and then tuin in 100MHz. 2. Adjust VR501 so that R output is minimized when stereo modulator is in L (Lch. modulation) mode and that L output is minimized in R mode.

16. Level adjustment of recording level check signal

1. Apply 60dB (1mV) stereo signal of 100MHz, 400Hz 90% modulation (L + R) and pilot signal 10% modulation to the antenna terminal.
2. Set the muting/FM mode switch to "on/auto", and then tune in the frequency.
3. Read the output coming from the output terminal (L or R) of the set.
4. Set the recording level check switch to "on".
5. Then, adjust VR402 so that the output of terminal L or R becomes 1/2 (−6dB) of the output level.

■ ABGLEICHANWEISUNGEN DEUTSCH

(Für Deutschland)

Anmerkungen:

1. Bereichsschalter ..... AM (MW Abgleich)
   FM (UKW Abgleich)
2. FM Muting/Mode Schalter .. off/mono
3. Active servo lock-Schalter .. off
4. Netzspannung auf ihren Sollwert halten.
5. UKW-Kunstantenne, 300 ohm .... Vgl Abb. 1.
6. Der Ausgang des Meßsenders darf nicht höher sein als unbedingt notwendig für eine gute Ablesung.
7. Nittels eines Schraubenziehers die Stellung der Antennenspule (L201) so einstellen, daß, sie gegen die Rückenplatte einen Winkel von ca. 25° macht.

	MW/UKW MESSENDER		SKALENZEIGEREINSTELLUNG DES TUNER	ANZEIGEGEIRÄT (Röhrenvoltmeter oder Oszillograph ozw. Klirrfaktor-Meßgerät)	ABGLEICHSPUNKTE	BEMERKUNGEN
	ANSCHLUSS	FREQUENZ				
	MW-ABGLEICH					
1	Heißes Ende des Meßsenders über einen 0.022μF Kondensator an den AM Antenneneingang schließen. Kaltes Ende an Masse	450kHz (400Hz Modulat., 30%)	Kein Empfang	Wechselstrom Röhrenvoltmeter oder Oszillograph über den Ausgang. "OUTPUT" schließen	T201 (1. IFT) Z201 (2. IFT)	Auf max. Ausgang abgleichen.
2	Das Meißsendersignal induktiv in den Tuner speisen. Hierzu behelfsmäßig eine Rahmenantenne fertigen und an den Eingang schließen.	600kHz (400Hz Modulat., 30%)	600kHz	Wechselstrom Röhrenvoltmeter oder Oszillograph über den Ausgang "OUTPUT" schleißen.	L202 (Osc. Spule) L201 (Ant. Spule)	Auf max. Ausgang abgleichen. Den Ferritkern von L201 mit einem Schraubendreher justieren.
3	Das Meßsendersignal induktiv in den Tuner speisen. Hierzu behelfsmäßig eine Rahmenantenne fertigen und an den Eingang schließen.	1500kHz (400Hz Modulat., 30%)	1500kHz	Wechselstrom Röhrenvoltmeter oder Oszillograph über den Ausgang "OUTPUT" scheißen.	CT202 (Osc. Trimmer) CT201 (Ant. Trimmer)	Auf max. Ausgang abgleichen. Schritt (2) und (3) sing zu wiederholen.
	MW-MUTING-ABGLEICH					
4		1500kHz (400Hz Modulat., 30%)	1500kHz		VR303 (MW-Muting)	1. Muting/FM mode Schalter auf "OFF/MONO" stellen. 2. 1500kHz (400Hz 30%) Signal ans Gerät speisen, dann auf 1500kHz abstimmen, und den Eingang dort einstellen wo die Abstimmungsanzeiger auf beiden Seiten (Abb. 9: a und b) erlöschtn. 3. Muting/FM mode Schalter auf "ON/AUTO" stellen. 4. VR303 so einstellen, daß der Ausgang unter Bewirken der Dämpfung gegeben wird. 5. Eingang senken, bis Dämpfung bewirkt, dann langsam Eingang erhöhen und sicherstellen, daß Ausgang zynchroniert mit Erlöschen des Abstimmungsanzeigers gegeben wird.
	UKW ZF-ABGLEICH					
5		Kein Signal	Kein Empfang	Gleichspannungsmesser über den Ausgang R110 widerstand schließen (Vgl. Abb. 2)	T101 (Diskriminator IFT) A	1. FM muting/mode-Schalter auf "on/auto". 2. Den Kern von T101 (A) so justieren, daß die gemessene Spannung im signallosen Modus 0V im 300mV Bereich beträgt.
	UKW-HF-ABGLEICH					
6	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen.	87.5MHz (400Hz Modulat., 100%	87,5MHz (Frequenz min.	Oszillograph über den Ausgang "OUTPUT" schließen.	L6 (Osc. Spule)	1. Einen schwachen Eingang geben, bei den Geräusch in der Ausgangswellenform enthalten wird. 2. So einstellen, daß die Ausgangswellenform vertikal symmetrisch wird. (Abb 11) 3. Die Einstellung von (6),(7) und (8) wiederhoten, bis die Frequenz mit der Skala übereinstimmt.
7	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen.	90MHz (400Hz Modulat., 100%)	90MHz	Oszillograph über den Ausgang "OUTPUT" schließen.	L3 (1. Det. Spule) L4 (2. Det. Spule) L1 (Ant. Spule)	
8	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen.	106MHz (400Hz Modulat.,	106MHz	Oszillograph über den Ausgang "OUTPUT" schließen.	CT4 (Osc. Trimmer) CT2 (1. Det. Trimmer) CT3 (2. Det. Trimmer) CT1 (Ant. Trimmer) T1 (UKW IFT)	

	MW/UKW MESSENDER ANSCHLUSS	MW/UKW MESSENDER FREQUENZ	SKALENZEIGEREINSTELLUNG DES TUNER	ANZEIGEGERÄT (Röhrenvoltmeter oder Oszillograph ozw. Klirrfaktor-Meßgerät)	ABGLEICHSPUNKTE	BEMERKUNGEN
ABGLEICH AUF MIN. VERZERRUNG IN STELLUNG UKW-MONO						
9	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen	100MHz (400Hz Modulat., 100%)	100MHz	Klirrfaktor-Meßbrücke über den Ausgang "OUTPUT" schließen.	T102 (Diskriminator IFT) B	1. FM muting/mode-Schalter auf "on/auto" stellen, dann in signalloser Mode den Schritt (5) feststellen. 2. Wenn Abweichung vorliegt, A (primäre Seite) von T101 wieder einstellen. 3. T101 (B) Kern für minimale Verzerrung der rechten und linken Kanäle justieren.
UKW-MUTING-ABGLEICH						
10	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen. Meßsender auf 22dB (12.6μV) einstellen.	100MHz (400Hz Modulat., 100%)	100MHz		VR301 (UKW-Muting)	1. Den muting/FM mode Schalter auf "OFF/MONO", und Dämpfungspegelumschalter auf "STANDARD" stellen, und auf 100MHz abstimmen. 2. Muting/FM mode Schalter auf "ON/AUTO" stellen, VR301 so einstellen, daß der Ausgang unter Bewirken der Dämpfung gegeben wird.
11	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen. Meßsender auf 46dB (200μV) einstellen.	100MHz (400Hz Modulat., 100%)	100MHz		VR302 (UKW-Muting)	1. Muting/FM mode Schalter auf "OFF/MONO" und Dämpfungspegelumschalter auf "FINE" stellen, und auf 100MHz abstimmen. 2. Muting/FM mode Schalater auf "ON/AUTO" stellen, VR302 so einstellen, daß der Ausgang unter Bewirken der Dämpfung gegeben wird.
UKW-STEREO-DEKODER-ABGLEICH						
12	Unter Verwendung eines Zählers: 1. Unmoduliertes Mono-Signal 100MHz in das Gerät speisen. 2. FM muting/mode-Schalter auf "on/auto" stellen. 3. Zähler über einen Widerstand 100KΩ an **TP401** schließen. 4. **VR403** auf 19kHz ±30Hz einstellen.			Alternativ-Meßmethode: 1. Stereosignal entweder von einem Stereogenerator — oder einem Sender einspeisen. 2. **VR403** so einstellen, bis die Stereolampe aufleuchtet. Schleifer von **VR403** sichern, wie in Abb. 12 gezeigt.		
PILOT-BANDPASSFILTER-ABGLEICHUNG						
13	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen.	100MHz [400Hz (L) 90%, Pilot 10% Modulat.,]	100MHz	Klirrfaktormesser an die Ausgangsklemme durch Tiefpaß filter an Ausgangsanschlüsse des Gerätes anschließen (Vgl. Abb.13)	L402 (Pilot-Bandpaßfilter)	1. L402 auf max. Ausgang einstellen. 2. Auf min. Verzerrung auf dem Klirrfaktormesser L402 wieder einstellen.
PILOT-CANCEL-ABLE-ABGLEICHUNG						
14	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen.	100MHz Pilot 10% Mod. 60dB stereo Nicht-modulierend	100MHz	Wechselstrom Röhrenvoltmeter oder Oszillograph über den Ausgang TP402 schließen.	VR401 (pilot cancel) L401 (pilot cancel)	1. Abstimmungen von VR401 und L401 wiederholen, um den Ausgang (19kHz) auf ein Minimum zu bringen.
HILFSTRÄGER-CANCEL						
15	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen.	100MHz Pilot 10% Mod. 60dB stereo Nicht-modulierent	100MHz	Wechselstrom-Voltmeter an "OUTPUT"-Anschluß dieses Gerätes anschließen.	CT501 (Hilfsträger-cancel)	1. So abstimmen, daß der Ausgang minimal wird.
KANALTRENNUNG-ABGLEICH						
16	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen.	100MHz Das Gerät auf 100MHz, 1kHz 30%, Pilot 10% Modulation 60dB Stereosignal einstellen.	100MHz	Wechselstrom-Röhrenvoltmeter oder Oszillograph durch Tiefpaß filter (fc=15 ~ 19kHz) an Ausgangsanschlüsse des Gerätes anschließen	VR501 (Kanaltrennung-Abgleich)	1. FM-Muting/mode Schalter auf "ON/AUTO stellen und abstimmen. 2. VR501 auf minimale Anzeige des R-Ausgangs bei Stereo-modulator in L-(L-Kanalmodulation) Modus, und auf minimale Anzeige des L-Ausgangs in R-Modus abgleichen.

17 Abgleichen des Aussteuerungskontrollsignals

1. 60dB (1 mV) Stereosignal von 100MHz, 400Hz 90% Modulation (L + R) und Pilotsignal 10% Modulation in die Antennenklemme speisen.
2. Muting/FM mode Schalter auf "ON/FM AUTO" stellen und abstimmen.
3. Ausgang aus der Ausgangsklemme (L oder R) des Gerätes ablesen.
4. Aussteuerungskontrollschalter auf "ON" stellen
5. VR402 so einstellen, daß der Ausgang der L- oder R-klemme 1/2 (–6dB) des in 3 abgelesenen Ausgang wird.

■ INSTRUCTIONS D'ALIGNMENT — FRANÇAIS

Notes:
1. Sèlecteur de gamme . . . . . { AM (Alignement AM) / FM (Alignement FM)
2. Commutateur de silencieux/mode . . . . . off/mono
3. Commutateur de servo-verrouillage . . . . . off
4. Conservel la tension du secteur à la tension nominale.
5. Antenne fictive FM 300Ω . . . . . Voir fig. 1.
6. Le signal du générateur ne doit pas être plus élevé qu'il n'est nécessaire à obtenir une lecture en sortie.
7. Régler la position de la bobine (L201) de l'antenne en utilisant un tournevis de telle sorte qu'alle soit environ à 25 degrés de la plaque arriére.

	AM/FM GENERATEUR		AIGUILLE SUR LE CADRAN	INDICATEUR (VOLTMETRE ELECTRONIQUE OSCILLOSCOPE OU DISTORSIONMETRE)	POINTS DE REGLAGE	OBSERVATIONS
	BRANCHEMENT	FREQUENCE				
	ALIGNEMENT AM					
1	Côté chaud, à travers 0.022μF, sur le trimmer de l'antenne AM, commum an shâssis	450kHz (modulè à 30% par 400Hz)	Point sans signal	C.A. voltmètre électronique ou oscilloscope sur prise de sortie de l'appareil.	T201 (1 transfo FI) Z201 (2 transfo FI)	Réglez au maximum de signal de sortie.
2	Faire une boucle de quelgues tours et rayonner le signal dans le cadre du l'ampli-tuner.	600kHz (modulé à 30% par 400Hz)	600kHz	C.A. voltmètre electronique ou oscilloscope sur prise de sortie de l'appareil.	L202 (bobine OSC) L201 (bobine ANT)	Réglez au maximum de signal de sortie. Régler le noyau ferrite de L201 à l'aide d'un tournevis.
3	Faire une boucle de quelgues tours et rayonner le signal dans le cadre du l'ampli-tuner	1500kHz (modulè à 30% per 400Hz)	1500kHz	C.A. voltmètre électronique ou oscilloscope sur prise de sortie de l'appareil.	CT202 (trimmer OSC) CT201 (trimmer ANT)	Réglez au maximum de signal de sortie. Recommencez les étapes (2) et (3).
	REGLAGE DE REGLAGE SILENCIEUX AM					
4		1500kHz (modulé à 30% par 400Hz)	1500kHz		VR303 (Reglage silencieux AM)	1. Placer le commutateur de mode/réglage silencieux FM sur la position "OFF/MODE". 2. Alimenter un signal de 1500 kHz (400Hz 30%) à l'appareil et accorder dans 1500kHz puis régler la sortie sur un niveau où les témoins d'accord des deux côtés (Fig. 1, a et c) sont éteints. 3. Placer le commutateur de mode/réglage silencieux FM sur la position "ON/AUTO". 4. Régler le VR303 de telle sorte que la sortie soit fournie quand le réglage silencieux est déclenché. 5. Baisser la sortie jusqu'à ce que le réglage silencieux soit effectué et ensuite, augmenter lentement l'entrée et s'assurer que la sortie est alimentée en synchronisation avec l'extinction des témoins d'accord.
	ALIGNEMENT FI-FM					
5		Sans signal	Point sans signal	C.C. voltmètre sur prise R110 résistance. (Voir fig. 2)	T101 (transfo FI discri) A	1. Commutateur de silencieux sur "on/auto". 2. Régler le noyau T101 (A) de telle sorte que le voltage mesuré dans le mode sans signal, soti de 0V dans la gamme des 300mV.
	ALIGNEMENT RF-FM					
6	Branchez sur la prise d'antenne FM à traves une antenne fictive FM	90MHz (modulé à 100% par 400Hz)	90MHz	Oscilloscope sur prise de sortie du tuner	L6 (bobine OSC) L3 (1er détecteur) L4 (2e détecteur) L1 (bobine ANT)	1. Appliquer une entrée faible de telle sorte que le parasite soit compris dans la forme de l'onde de sortie. 2. Faire le réglage de telle sorte que la forme de l'onde de sortie soit verticalement symétrique. (Voir fig. 11) 3. Refaire les réglages (6) et (7) jusqu'à ce que la fréquence corresponde correctement avec l'échells du cadran.
7	Branchez sur la prise d'antenne FM à travers une antenne fictive FM.	106MHz (modulé à 100% par 400Hz)	106MHz	Oscilloscope sur prise de sortie du tuner.	CT4 (trimmer OSC) CT2 (1er trimmer DET) CT3 (2e trimmer DET) CT1 (trimmer ANT) T1 (FM IFT)	
	REGLAGE DE LA DISTORSION FM EN MONO					
8	Branchez sur la prise d'antenne FM à travers une antenne fictive FM.	100MHz (modulé à 100% par 400Hz)	100MHz	Distorsiomètre sur prise de sortie du tuner.	T102 (Transfo FI discri.) B	1. Placer la commutateur Sourdine FM/Mode sur "on/auto" et vérifier l'étape 4 dans un mode sans signal. 2. S'il est déplacé, re-régler A (côté primaire) de T101. 3. Régler le noyou T102 (B) de telle sorte que la distorsion des canaux droit et gauche soit la plus faible.

	AM/FM GENERATEUR		AIGUILLE SUR LE CADRAN	INDICATEUR (VOLTMETRE ELECTRONIQUE OSCILLOSCOPE OU DISTORSIONMETRE)	POINTS DE REGLAGE	OBSERVATIONS
	BRANCHEMENT	FREQUENCE				
	REGLAGE DU SEUIL DU SILENCIEUX D'ACCORD					
9	Branchez sur la prise d'antenne FM à travers une antenne fictive FM. Niveau de sortie du générateur 22dB (12.6μV).	100MHz (modulé à 100% par 400Hz)	100MHz		VR301	1. Régler le commutateur de mode/réglage silencieux FM sur la position "OFF/MODE" et le commutateur de changement de niveau de réglage silencieux sur "STANDARD" et accorder sur 100MHz. 2. Avec le commutateur de mode/réglage silencieux FM réglé sur la position "ON/AUTO", régler le VR301 de telle sorte que la sortie fournie avec le réglage silencieux en position déclenchée.
10	Branchez sur la prise d'antenne FM à travers une antenne fictive FM. Niveau de sortie du générateur 46dB (200μV).	100MHz (modulé à 100% par 400Hz)	100MHz		VR302	1. Placer le commutateur de mode/réglage silencieux FM sur la position "ON/MODE" et le commutateur de changement de niveau de réglage silencieux sur la position "FINE" et accorder sur 100MHz 2. Avec le commutateur de mode/réglage silencieux FM réglé sur la position "ON/AUTO", régler le VR302 de telle sorte que la sortie fournie avec le réglage silencieux en position déclenchée.
	ALIGNEMENT DU PILOTE MULTIPLEX FM					
11	Avec un fréquencemétre 1. Signal mono 100MHz non modulé appliqué à l'appariel. 2. Commutateur de silencieux sur "on/auto". 3. Branchez le fréquencemètre sur **TP401** à travers une résistance de 100kΩ. 4. Régler **VR403** sur 19kHz ±30Hz.			Par un outre système 1. Appliquez à l'appareil un sinal stéréo provenant d'un gégérateur ou de la réception d'un émetteur. 2. Régler **VR403** jusqu à ce que l'indicateur de stéréophonic s'allume. Collez le curseur de **VR403** comme indiqué sur la fig. 12.		
	FILTER PASSEBANDE PILOTE					
12	Branchez sur la prise d'antenne FM à traves une antenne fictive FM	100MHz [400Hz (L) 90%, pilote 10% modulation)	100MHz	Distorsiométre sur prise de sortie, par lintermédiaire du filtre passe-bas (fig. 13)	L402	1. Brancher le distorsiomètre sur la borne de sortie de l'appareil. 2. Régler le L402 de telle sorte que la sortie soit au maximum. 3. Régler de nouveau le L402 de telle sorte que la distorsion de la sortie du canal gauche, soit minimale.
	ANNULATION PILOTE					
13	Branchez sur la prise d'antenne FM à traves une antenne fictive FM	100MHz (Modulation, pilote 10%, 60dB Signal Stéréo non-modulation)	100MHz	C.A. voltmètre électronique ou oscilloscope sur prise de sortie de TP402.	VR401 L401	1. Répéter les réglages de VR401 et de L401, de facon à amener la sortie (19kHz) au minimale.
	ANNULATION DE SOUR-PORTEUSES					
14	Branchez sur la prise d'antenna FM à traves une antenne fictive FM.	100MHz (Modulation, pilote 10%, 60dB Signal, Stéréo non-modulation)	100MHz	C.A. voltmètre électronique ou oscilloscope sur prise de sortie de l'appareil.	CT501	1. Faire le réglage pour amener la sortie au minimale.
	REGLAGE DE LA SEPARATION DES CANAUX					
15	Branchez sur la prise d'antenne FM à traves une antenne fictive FM	100MHz Ajouter 100MHz, 1kHz, Modulation, pilote 10%, signal stéréophonique 60dB, à lappareill.	100MHz	Brancher un voltmètre électronique C.A. ou un oscilloscope aux bornes de sortie, par l'intermédiaire du filtre passe-bas (fc=15 ~ 19kHz).	VR501	1. Placer le commutateur de mode/réglage silencieux FM sur "ON/FM AUTO" et accorder sur 100MHz. 2. Régler VR501 de telle sorte que la sortie droite soit minimale quand la commande d'accord stéréophonique est dans le mode gauche (modulation du canal gauche) et que la sortie gauche soit minimale dan mode droit.

16 Réglage du niveau en fonction du signal de vérification du niveau d'enregistrement.

1. Appliquer un signal stéréo de 60dB (1mV) de 100MHz, 40Hz, 90% de modulation (Gauche + Droit) et un signal pilote de 10% de modulation à la borne de l'antenne.
2. Régler le commutateur de mode/réglage silencieux FM sur la position "ON/FM AUTO" et accorder dans la fréquence.
3. Lire la sortie venant de la borne de sortie (droite et gauche) de l'appareil.
4. Placer le commutateur de vérification du niveau d'enregistrement sur la position "ON".
5. Régler le VR402 de telle sorte que la sortie de la borne droite ou gauche passe à 1/2 (−6dB) du niveau de sortie.

■ REPLACEMENT PARTS LIST ..... Electrical Parts

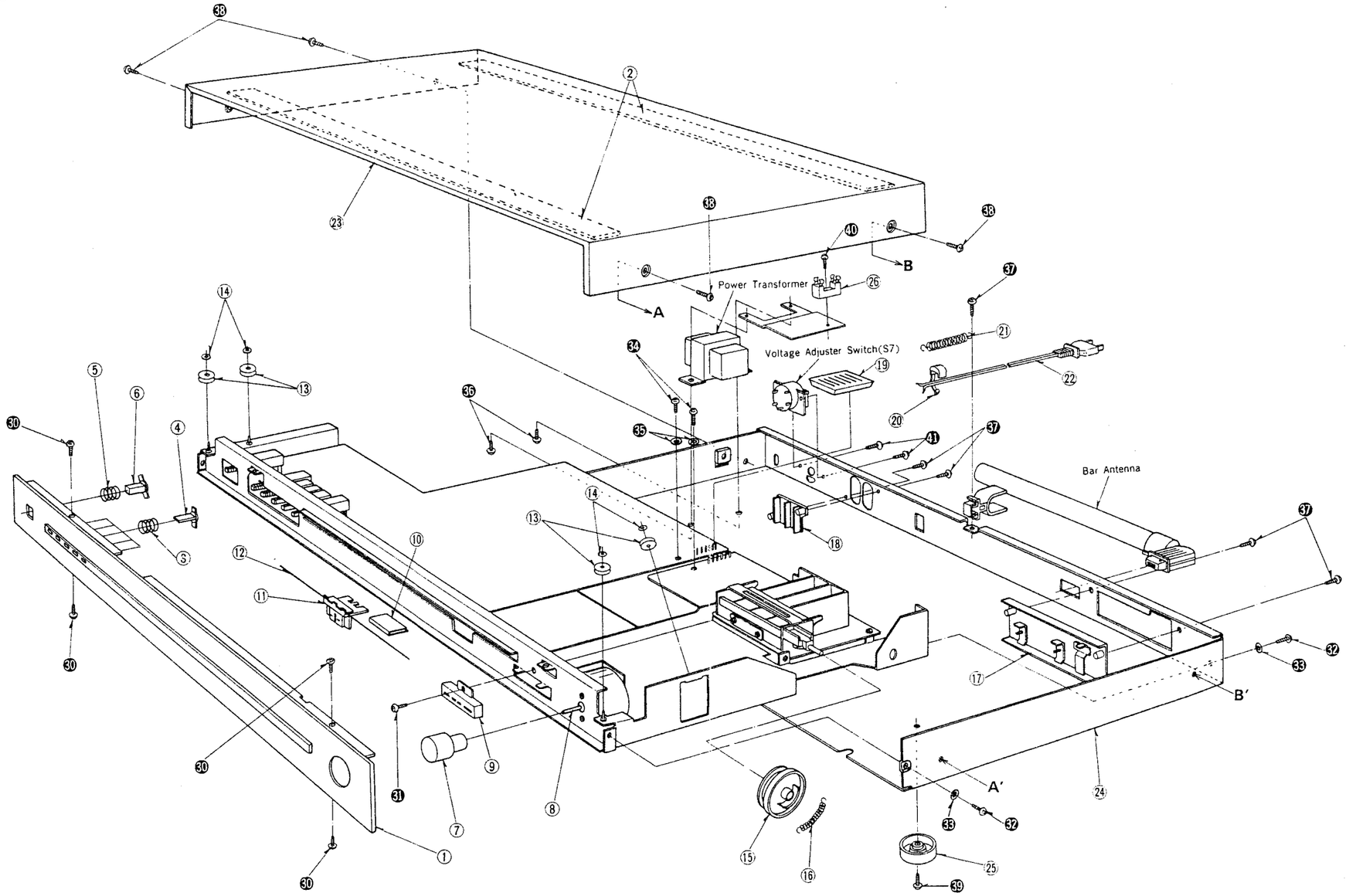
NOTES: 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. △ indicates that only parts specified by the manufacturer be used for safety.

Ref. No.		Part No.	Part Name & Description
INTEGRATED CIRCUITS			
IC101		AN217P-BB	IC, FM IF Amplifier & AM Convertor
IC102		AN377N	IC, FM IF Amplifier & Detector
IC301, 501		SVIUPC4558C	IC, DC & AF Amplifier
IC401		AN363N	IC, Multiplex
IC601		SVIFS7812M	IC, Regulator
TRANSISTORS			
Q1		3SK74-L1	Transistor, FM RF Amplifier
Q2		**2SC1047-C**	Transistor, FM Mixer
Q3		2SC1675-L	Transistor, FM Local Oscillator
Q101, 301, 302, 303, 304, 305, 307 ~ 313, 316, 317, 320, 406, 601, 602		**2SC945-R**	Transistor, Level Switching, Servo Lock Muting Switching & Rec Level Oscillator (Use in ranks R or P1)
Q102, 201, 202, 203, 318, 319, 321, 401, 402, 403, 404, 405, 501, 502		**2SC945-R**	Transistor, FM/AM Buffer, Muting Switching, 19 kHz Amplifier & AF Muting (Use in ranks R or P2)
Q306, 503		2SA733-P1	Transistor, LED Switching & Muting
DIODES			
D1		SVD1S2687AA	Diode, Variable Capacitor
D101, 102, 103, 201, 203, 301, 302, 311, 312, 314, 318, 402, 602		MA150	Diode, Switching
D202, 401		SVDKB262E	Diode, AM AGC & Switching
D303		MA1051A	Diode, 5.1V Zener
D304		SVDMZ304B	Diode, 4V Zener
D308, 310, 315, 317, 319		OA90	Diode, Switching
D316, 320		OA99	Diode, Switching
D321		OA95	Diode Switching
D601	△	SVDMI151U	Rectifier
COILS and TRANSFORMERS			
L1		SLD4P25-P	Coil, FM Antenna
L2		SLAA4W1-3	Coil, FM Antenna Balun
L3		SLD4P27-P	Coil, FM RF Detector
L4		SLD4P29-P	Coil, FM RF Detector
L5		RLQY15G5-Y	Coil, Choke
L6		SLO4P49-P	Coil, FM Local Oscillator
L101		SLQW180-1K	Coil, Choke
L201		SLF2D53	Coil, AM Ferrite Core Antenna
L202		SLO2C9-P	Coil, AM Local Oscillator
L401, 402		SLM1C37-Z	Coil, Pilot Cancel
L501		SLQW204-1K	Coil, Choke
L601		SLQX101-2D	Coil, Choke
T1		SLI4C109	Transformer, FM IF
T101		SLI4C511-K	Transformer, FM Discriminator
T102		SLI4C513-K	Transformer, FM Discirminator
T201		SLI2C123-P	Transformer, AM IF
T601	△	SLT5J63	Transformer, Power Source
CERAMIC FILTERS			
CF101		SVFF107MC1-A	Ceramic Filter, 107MHz (Red)
		SVFF107MC1-B	Ceramic Filter, 10.67MHz (Blue)
		SVFF107MC1-C	Ceramic Filter, 10.73MHz (Orange)
CF102		SVFE107MM-A	Ceramic Filter, 10.7MHz (Red)
		SVFE107MM-B	Ceramic Filter, 10.67MHz (Blue)
		SVFE107MM-C	Ceramic Filter, 10.73MHz (Orange)
CF103		SVFE107ML-A	Ceramic Filter, 10.7MHz (Red)
		SVFE107ML-B	Ceramic Filter, 10.67MHz (Blue)
		SVFE107ML-C	Ceramic Filter, 10.73MHz (Orange)
		(Use pair ranks as same as CF101, CF102 and CF103)	
CF201		SVFSFZ450A	Ceramic Filter, AM 450kHz
CF201 [XE] only		SVFSFZ470A	Ceramic Filter, AM 470kHz
COMPONENT COMBINATIONS			
Z201		SLI9F101-Z	Component Combination, AM IFT & Detector
Z601	△	EXRFS203ZS	Component Combination, 0.01μF (X2)

Ref. No.		Part No.	Part Name & Description
VARIABLE RESISTORS			
VR301, 302, 303		**EVLS3AA00B15**	FM/AM Muting Level Adjustment, 100kΩ (B)
VR401, 501		**EVLS3AA00B54**	Pilot Cancel & Separation Adjustment, 50kΩ (B)
VR402		**EVLS3AA00B55**	Recording Check Signal Level Adjustment 500kΩ (B)
VR403		EVTS3MA00B14	PLL VCO 19kHz Adjustment, 10kΩ (B)
VARIABLE CAPACITORS			
CV1, 2, 3, 4 201, 202		ECV6MD34X77G	Variable Capacitor, FM/AM Tuning Gang
CT1, 2, 3, 202		SVCTY121B269	Variable Capacitor, FM/AM Trimmer
CT4		ECV1ZW06X32E	Variable Capacitor, FM Locla OSC Trimmer
CT201		ECV1ZW20X32	Variable Capacitor, FM/AM Trimmer
CT501		ECV1ZW30X32	Variable Capacitor, Sub Carrier Cancel Trimmer
SWITCHES			
S1	△	SSH97	Switch, Power Source
S2, 3, 4, 5, 6		SSH521	Switch, Rec Level, Servo Lock, Muting, FM Mode & FM/AM Selector
S7	△	ESE372	Switch, Voltage Adjuster
FUSES			
F1	△	XBA2C06TR0	Fuse, T 630mA (250V) Power Source
F1 [XE] only	△	XBAS2A00801	Fuse, 80mA (250V) Power Source
RESISTORS			
R1		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R2		**ERD25TJ153**	Carbon, 15kΩ, 1/4W, ± 5%
R3		**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ± 5%
R4		**ERD25TJ221**	Carbon, 220Ω, 1/4W, ± 5%
R5		**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ± 5%
R6		**ERD25TJ822**	Carbon, 8.2kΩ, 1/4W, ± 5%
R7		**ERD25TJ102**	Carbon, 1kΩ, 1/4W, ± 5%
R8		**ERD25TJ221**	Carbon, 220Ω, 1/4W, ± 5%
R9		**ERD25TJ101**	Carbon, 100Ω, 1/4W, ± 5%
R11		**ERD25TJ102**	Carbon, 1kΩ, 1/4W, ± 5%
R12		**ERD25TJ152**	Carbon, 1.5kΩ, 1/4W, ± 5%
R13		**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ± 5%
R14		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R15		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R101		**ERD25TJ271**	Carbon, 270Ω, 1/4W, ± 5%
R102		**ERD25TJ331**	Carbon, 330Ω, 1/4W, ± 5%
R103		**ERD25TJ821**	Carbon, 820Ω, 1/4W, ± 5%
R104		**ERD25TJ331**	Carbon, 330Ω, 1/4W, ± 5%
R105		**ERD25TJ104**	Carobn, 100kΩ, 1/4W, ± 5%
R106		**ERD25TJ562**	Carbon, 5.6kΩ, 1/4W, ± 5%
R107		**ERD25TJ222**	Carbon, 2.2kΩ, 1/4W, ± 5%
R108		**ERD25TJ153**	Carbon, 15kΩ, 1/4W, ± 5%
R109		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R110		**ERD25TJ392**	Carbon, 3.9kΩ, 1/4W, ± 5%
R111		**ERD25TJ102**	Carbon, 1kΩ, 1/4W, ± 5%
R112		**ERD25TJ331**	Carbon, 330Ω, 1/4W, ± 5%
R113	△	ERD25FJ470	Carbon, 47Ω, 1/4W, ± 5%
R114		**ERD25TJ153**	Carbon, 15kΩ, 1/4W, ± 5%
R115		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R116		**ERD25TJ821**	Carbon, 820Ω, 1/4W, ± 5%
R117		**ERD25TJ330**	Carbon, 33Ω, 1/4W, ± 5%
R118		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R119		**ERD25TJ472**	Carbon, 4.7kΩ, 1/4W, ± 5%
R120		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R201		**ERD25TJ562**	Carbon, 5.6kΩ, 1/4W, ± 5%
R202		**ERD25TJ392**	Carbon, 3.9kΩ, 1/4W, ± 5%
R203		**ERD25TJ122**	Carbon, 1.2kΩ, 1/4W, ± 5%
R204		**ERD25TJ101**	Carbon, 100Ω, 1/4W, ± 5%
R205		**ERD25TJ272**	Carbon, 2.7kΩ, 1/4W, ± 5%
R206		**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ± 5%
R207		**ERD25TJ274**	Carbon, 270kΩ, 1/4W, ± 5%
R208		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R209		**ERD25TJ223**	Carbon, 22kΩ, 1/4W, ± 5%
R210		**ERD25TJ472**	Carbon, 4.7kΩ, 1/4W, ± 5%
R211		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R212		**ERD25TJ332**	Carbon, 3.3kΩ, 1/4W, ± 5%
R213		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R214		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R301		**ERD25TJ684**	Carbon, 680kΩ, 1/4W, ± 5%
R302		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R303		**ERD25TJ683**	Carbon, 68kΩ, 1/4W, ± 5%

(Continued to Page 25)

■ EXPLODED VIEWS



■ REPLACEMENT PARTS LIST ..... Cabinet and Chassis Parts

NOTES: 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. ⚠ indicates that only parts specified by the manufacturer be used for safety

Ref. No.		Part No.	Part Name & Description
		CABINET and CHASSIS PARTS	
1		SGWT8077D1	Panel, Front Ass'y
2		SHS1009	Rubber Cushion, Cabinet
3		SUS143-1	Spring, Rec Level Check, Active Servo Lock, Muting/FM Mode Switch
4		SBC199	Button, Rec Level Check, Active Servo Lock, Muting/FM Mode Switch
5		SUS123-1	Spring, Power Switch
6		SBC197	Button, Power Switch
7		SBN775	Knob, Tuning
8		SDT8049	Shaft, Tuning Control Ass'y
9		SWV1	Indicator Ass'y, FM Stereo & FM Muting Active Servo Lock
10		SHP15-2	Paper, Pointer Slide
11		SWV5-1	Pointer, Dial
12		SDZ051-2	Cord, Dial (1.8m)
13		**RDR20-3**	Pulley, Dial Cord
14		RNW150-2	Washer, Pulley Lock
15		SDD9021	Drum, Dial Cord
16		SDSA4121	Spring, Dial Cord
17		SJF4419-2	Terminal, Antenna
18		SJF343IN	Terminal, Output
19		SJS5611	Connector, 6pin
20		SHR127	Bushing, AC Cord
21		SUS147-1	Spring, Dial Pointer Cord
22	⚠	RJA23ZC	AC Cord, with Plug
23		SKA10210	Cabinet
24 [E] only		SUAT8077D	Chassis, Bottom & Rear Panel
24		SUAT8077E	Chassis, Bottom & Rear Panel
25		SKL197	Foot, set
26		SJFA5101	Holder, Fuse

Ref. No.		Part No.	Part Name & Description
		SCREWS and WASHERS	
㉚		**XTB3+6BFZ**	Screw, Front Panel M'tg
㉛		**XTB3+6BFZ**	Screw, FM Stereo & FM Muting Indicator Ass'y M'tg
㉜		**XTB3+8BFZ**	Screw, Chassis M'tg
㉝		**XWC3B**	Washer, Chassis Screw
㉞		**XTB3+6BFZ**	Screw, Printed Circuit Board Ass'y M'tg
㉟		**XWC3B**	Washer, Printed Circuit Board Ass'y Screw
㊱		**XTB3+8BFZ**	Screw, Power Transformer M'tg
㊲		**XTB3+6BFZ**	Screw, Antenna Terminal, Output Terminal & Spring M'tg
㊳		**XTB3+8BFN**	Screw, Cabinet M'tg
㊴		**XTB3+10BFZ**	Screw, Set Foot M'tg
㊵		**XTN3+8B**	Screw, Fuse Holder M'tg
㊶		XTB3+16BFZ	Screw, Voltage Adjuster Switch M'tg

Notes: (E) and (EG) are available in Scandinavia and European only.
(EB) is available in Belgium only.
(XGH) is available in Holland only.
(XGF) is available in France only.
(XE) is available in United Kingdom only.
(X) and (XA) are available in Asia, Latin America, Middle East and Africa only.
(XAL) is available in Australia only.

(Continued from Page 22)

Ref. No.		Part No.	Part Name & Description
R304		**ERD25TJ154**	Carbon, 150kΩ, 1/4W, ± 5%
R305		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R306		**ERD25TJ272**	Carbon, 2.7kΩ, 1/4W, ± 5%
R307		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R308		**ERD25TJ682**	Carbon, 6.8kΩ, 1/4W, ± 5%
R309		**ERD25TJ683**	Carbon, 68kΩ, 1/4W, ± 5%
R310		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R311		**ERD25TJ472**	Carbon, 4.7kΩ, 1/4W, ± 5%
R313		**ERD25TJ274**	Carbon, 270kΩ, 1/4W, ± 5%
R314		**ERD25TJ223**	Carbon, 22kΩ, 1/4W, ± 5%
R315		**ERD25TJ274**	Carbon, 270kΩ, 1/4W, ± 5%
R316		**ERD25TJ223**	Carbon, 22kΩ, 1/4W, ± 5%
R317		**ERD25TJ331**	Carbon, 330Ω, 1/4W, ± 5%
R318		**ERD25TJ561**	Carbon, 560Ω, 1/4W, ± 5%
R319		**ERD25TJ153**	Carbon, 15kΩ, 1/4W, ± 5%
R320		**ERD25TJ472**	Carbon, 4.7kΩ, 1/4W, ± 5%
R321		**ERD25TJ472**	Carbon, 4.7kΩ, 1/4W, ± 5%
R322		**ERD25TJ104**	Carbon 100kΩ, 1/4W, ± 5%
R323		**ERD25TJ471**	Carbon 470Ω, 1/4W, ± 5%
R324		**ERD25TJ681**	Carbon, 680Ω, 1/4W, ± 5%
R325		**ERD25TJ471**	Carbon, 470Ω, 1/4W, ± 5%
R326		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R327		**ERD25TJ222**	Carbon 2.2kΩ, 1/4W, ± 5%
R328, 329		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R330		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R332		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R334		ERC14GK335	Solid, 3.3MΩ, 1/4W, ± 10%
R335		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R338		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R340		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R341		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R342		**ERD25TJ223**	Carbon, 22kΩ, 1/4W, ± 5%
R343		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R345		**ERD25TJ682**	Carbon, 6.8kΩ, 1/4W, ± 5%
R346		**ERD25TJ222**	Carbon, 2.2kΩ, 1/4W, ± 5%
R347, 348		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R349, 350		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R351		**ERD25TJ474**	Carbon, 470kΩ, 1/4W, ± 5%
R352		**ERD25TJ393**	Carbon, 39kΩ, 1/4W, ± 5%
R353, 354		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R355		**ERD25TJ102**	Carbon, 1kΩ, 1/4W, ± 5%
R356		**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ± 5%
R357		**ERD25TJ102**	Carbon, 1kΩ, 1/4W, ± 5%
R358		**ERD25TJ271**	Carbon, 270Ω, 1/4W, ± 5%
R359		**ERD25TJ392**	Carbon, 3.9kΩ, 1/4W, ± 5%
R401		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R402		**ERD25TJ332**	Carbon, 3.3kΩ, 1/4W, ± 5%
R403		**ERD25TJ683**	Carbon, 68kΩ, 1/4W, ± 5%
R404		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R405		**ERD25TJ472**	Carbon, 4.7kΩ, 1/4W, ± 5%
R406		**ERD25TJ274**	Carbon, 270kΩ, 1/4W, ± 5%
R407		**ERD25TJ563**	Carbon, 56kΩ, 1/4W, ± 5%
R408		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R409		**ERD25TJ272**	Carbon, 2.7kΩ, 1/4W, ± 5%
R410		**ERD25TJ223**	Carbon, 22kΩ, 1/4W, ± 5%
R411		**ERD25TJ562**	Carbon, 5.6kΩ, 1/4W, ± 5%
R412		**ERD25TJ224**	Carbon, 220kΩ, 1/4W, ± 5%
R413		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R414		**ERD25TJ562**	Carbon, 5.6kΩ, 1/4W, ± 5%
R415		**ERD25TJ392**	Carbon, 3.9kΩ, 1/4W, ± 5%
R416		**ERD25TJ153**	Carbon, 15kΩ, 1/4W, ± 5%
R417		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R418		**ERD25TJ473**	Carbon, 47kΩ, 1/4W, ± 5%
R419		**ERD25TJ123**	Carbon, 12kΩ, 1/4W, ± 5%
R420		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R421		**ERD25TJ392**	Carbon, 3.9kΩ, 1/4W, ± 5%
R422		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R423	⚠	ERD25FJ101	Carbon, 100Ω, 1/4W, ± 5%
R424		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R425		**ERD25TJ153**	Carbon, 15kΩ, 1/4W, ± 5%
R426		**ERD25TJ102**	Carbon, 1kΩ, 1/4W, ± 5%
R427		**ERD25TJ474**	Carbon, 470kΩ, 1/4W, ± 5%
R428		**ERD25TJ331**	Carbon, 330Ω, 1/4W, ± 5%
R429, 430		ERO25CKG4701	Metal Film, 4.7kΩ, 1/4W, ±10%
R431, 432		ERO25CKG4701	Metal Film, 47kΩ, 1/4W, ±10%
R443		**ERD25TJ332**	Carbon, 3.3kΩ, 1/4W, ± 5%
R501, 502		**ERD25TJ102**	Carbon, 1kΩ, 1/4W, ± 5%
R503, 504		**ERD25TJ472**	Carbon, 4.7kΩ, 1/4W, ± 5%
R505, 506		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R507, 508		**ERD25TJ472**	Carbon, 4.7kΩ, 1/4W, ± 5%
R509, 510		**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ± 5%
R511, 512		**ERD25TJ562**	Carbon, 5.6kΩ, 1/4W, ± 5%
R513		**ERD25TJ101**	Carbon, 100Ω, 1/4W, ± 5%
R515, 516		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%
R517		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R601		**ERG1ANJ100**	Metal oxide, 10Ω, 1W, ± 5%
R602		**ERD25TJ222**	Carbon, 2.2kΩ, 1/4W, ± 5%
R603		**ERD25TJ124**	Carbon, 120kΩ, 1/4W, ± 5%
R604		**ERD25TJ684**	Carbon, 680kΩ, 1/4W, ± 5%
R605		**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ± 5%

Ref. No.		Part No.	Part Name & Description
			CAPACITORS
C1		ECCD1H180KC	Ceramic, 18pF, 50V, ±10%
C2		ECCD1H220KC	Ceramic, 22pF, 50V, ±10%
C3		ECCD1H150KC	Ceramic, 15pF, 50V, ±10%
C4		ECKD1H102MDA	Ceramic, 0.001μF, 50V, ±20%
C5		ECCD1H180KC	Ceramic, 18pF, 50V, ±10%
C6		ECGN5R39K	Ceramic, 0.39μF, 500V, ±10%
C7		ECCD1H180KC	Ceramic, 18pF, 50V, ±10%
C8		ECKD1H102ZF	Ceramci, 0.001μF, 50V, +80% −20%
C9		ECCD1H040CC	Ceramic, 4pF, 50V, ±0.25pF
C10		ECCD1H050CC	Ceramic, 5pF, 50V, ±0.25pF
C11		ECCD1H181K	Ceramic, 180pF, 50V, ±10%
C12, 13		ECKD1H223ZF	Ceramic, 0.022μF, 50V, +80% −20%
C14		ECKD1H223ZF	Ceramic, 0.022μF, 50V, +80% −20%
C15		ECKD1H102MDA	Ceramic, 0.001μF, 50V, ±20%
C16		ECCD1H150KC	Ceramic, 15pF, 50V, ±10%
C17		ECCD1H390KC	Ceramic, 39pF, 50V, ±10%
C18		**ECEA1AS470**	Electrolytic, 47μF, 10V
C20		ECCD1H070DC	Ceramic, 7pF, 50V, ±0.5pF
C23		ECKD1H103ZF	Ceramic, 0.01μF, 50V, +80% −20%
C24		ECKD1H223ZF	Ceramic, 0.022μF, 50V, +80% −20%
C25		ECKD1H102MDA	Ceramic, 0.001μF, 50V, ±20%
C26		ECCD1H070DC	Ceramic, 7pF, 50V, ±0.5pF
C27, 28		ECKD1H223ZF	Ceramic, 0.022μF, 50V, +80% −20%
C101, 102		ECQM1H223KZ	Polyester, 0.022μF, 50V, ±10%
C103, 104		ECKD1H223ZF	Ceramic, 0.022μF, 50V, +80% −20%
C105		**ECEA1HS100**	Electrolytic, 10μF, 50V
C106		ECCD1H101K	Ceramic, 100pF, 50V ±10%
C107		**ECEA1JS4R7**	Electrolytic, 4.7μF, 63V
C108		**ECEA50ZR47**	Electrolytic, 0.47μF, 50V,
C109, 110		ECKD1H223ZF	Cefmaic, 0.022μF, 50V, +80% −20%
C111		**ECEA1HS100**	Electrolytic, 10μF, 50V
C112		ECKD1H223ZF	Ceramic, 0.022μF, 50V, +80% −20%
C113		**ECEA50ZR1**	Electrolytic, 0.1μF, 50V
C114		ECKD1H223ZF	Ceramic, 0.022μF, 50V, +80% −20%
C115		**ECEA1HS100**	Electrolytic, 10μF, 50V
C116, 117		ECKD1H223ZF	Ceramic, 0.022μF, 50V, +80% −20%
C201		ECKD1H223ZF	Ceramic, 0.022μF, 50V, +80% −20%
C202		ECKD1H103MD	Ceramic, 0.01μF, 50V, ±20%
C203		ECKD1H223ZF	Ceramic, 0.022μF, 50V, +80% −20%
C204		ECKD1H103MD	Ceramic, 0.01μF, 50V, ±20%
C205		ECQS1361JZ	Polystyrene, 360pF, 125V, ± 5%
C206		ECCD1H180KC	Ceramic, 18pF, 50V, ±10%
C207		ECCD1H560KC	Ceramic, 56pF, 50V, ±10%
C208		**ECEA1JS4R7**	Electrolytic, 4.7μF, 63V
C209		**ECEA50Z3R3**	Electrolytic, 3.3μF, 50V
C210		ECQM1H273KZ	Polyester, 0.027μF, 50V, ±10%
C212		ECKD1H223ZF	Ceramic, 0.023μF, 50V, +80% −20%
C213		ECQM1H472JZ	Polyester, 0.0047μF, 50V ± 5%
C301		**ECEA1AS101**	Electrolytic, 100μF, 10V
C303		ECKD1H103ZF	Ceramic, 0.01μF, 50V, +80% −20%
C304		**ECEA50ZR47**	Electrolytic, 0.47μF, 50V
C306		**ECEA50ZR47**	Eelctrolytic, 0.47μF, 50V
C308	⚠	**ECEA16N10**	Non-polar Electrolytic, 10μF, 16V
C309	⚠	**ECEA50N1**	Non-polar Electrolytic, 1 μF, 50V
C311		**ECEA1ES470**	Electrolytic, 47μF, 25V
C312		**ECEA1HS100**	Electrolytic, 10μF, 50V
C313		ECQM1H333KZ	Polyester, 0.033μF, 50V, ±10%
C314	⚠	**ECEA16N4R7**	Non-polar Electrolytic, 4.7μF, 16V
C401		ECKD1H103ZF	Ceramic, 0.01μF, 50V +80% −20%
C402		**ECEA1HS100**	Electrolytic, 10μF, 50V
C404, 405		ECKD1H103ZF	Ceramic, 0.01μF, 50V +80% −20%
C406		**ECEA1HS100**	Electrolytic, 10μF, 50V
C407, 408		ECKD1H103ZF	Ceramic,q 0.01μF, 50V, +80% −20%
C409, 410		ECQM1H472JZ	Polyester 0.0047μF, 50V, ± 5%
C411		ECKD1H103ZF	Ceramic, 0.01μF, 50V, +80% −20%
C412		**ECEA1JS4R7**	Electrolytic, 4.7μF, 63V
C413		**ECEA1ES101**	Electrolytic, 100μF, 25V
C414		ECQS1471JZ	Polystyrene, 470pF, 125V, ± 5%
C415		**ECEA1HS100**	Electrolytic, 10 F, 50V
C416		**ECEA50MR22R**	Electrolytic, 0.22μF, 50V
C417		**ECEA50ZR47**	Electrolytic, 0.47μF, 50V
C418		**ECEA50MR47R**	Electrolytic, 0.47μF, 50V
C419, 420		ECQF1183GZ	Polypropylene, 0.012μF, 25V, ± 2%
C421		**ECEA1CS221**	Electrolytic, 220μF, 16V
C422, 423		ECQS1562JZ	Polystyrene, 5600pF, 125V, ± 5%
C501, 502		**ECEA50ZR47**	Electrolytic, 0.47μF, 50V
C503		**ECEA1ES470**	Electrolytic, 47μF, 25V
C504		ECCD1H560KC	Ceramic, 56pF, 50V, ±10%
C505, 506		**ECEA50Z3R3**	Electrolytic, 3.3μF, 50V
C507		**ECEA1CS221**	Electrolytic, 220μF, 16V
C508		**ECEA50Z3R3**	Electrolytic, 3.3μF, 50V
C601, 602		**ECEA1CS222**	Electrolytic, 2200μF, 16V
C603		**ECEA1ES471**	Electrolytic, 470μF, 25V
C604		**ECEA50Z3R3**	Electrolytic, 3.3μF, 50V
C605		**ECEA1AS470**	Electrolytic, 47μF, 10V
C606	⚠	ECKD1H223ZF	Ceramic, 0.022μF, 50V, +80% −20%
C607		**ECEA50Z1**	Electrolytic, 1μF, 50V

■ REPLACEMENT PARTS LIST ..... Accessories & Packing Parts

Ref. No.		Part No.	Part Name & Description
			ACCESSORIES
A1		SJP2129-5	Cord, Connection Shield
A2		SSA251	Cord, FM Feeder Antenna
A3		SHS2389	Felt, Foot

Ref. No.		Part No.	Part Name & Description
			PACKING PARTS
P1		SPP603	Polythylene Bag
P2		SPS1755	Pad, Left & Right Side
P3 [E]		SPG1855	Carton Box
P3 [XGF]		SPG1857	Carton Box
P3 [XGH, EB, EG]		SPG1859	Carton Box
P4		SQF10125	Instructions Book, Printed Matter

■ CHANGE OF PARTS LIST

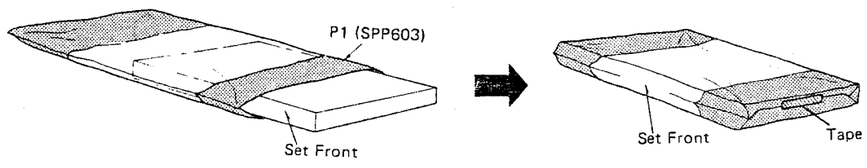
ST-8077K (E), (EG), (EB), (XGH), (XE), (X), (XA), (XAL)

Note: This parts list included only the changes of the model ST-8077 parts list.

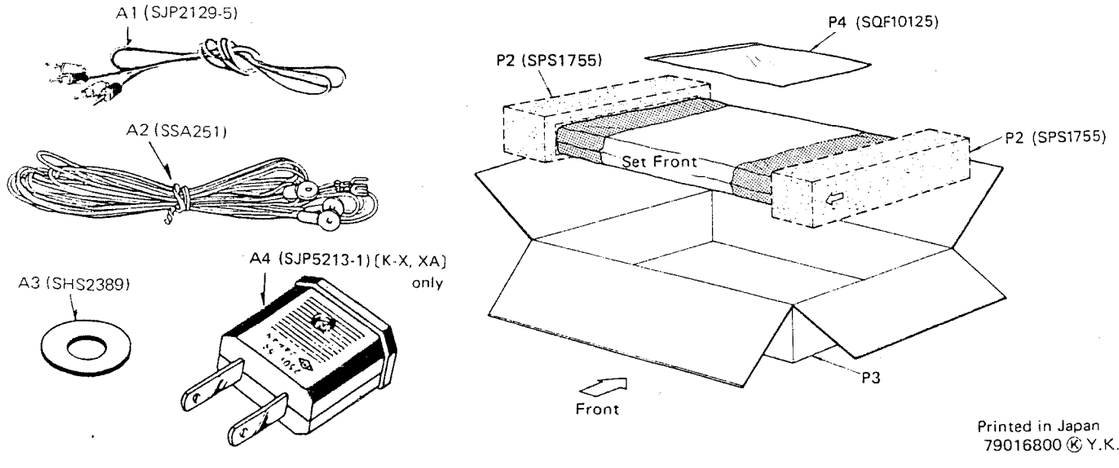
Ref. No.	Change of Part No. ST-8077	→ ST-8077K	Part Name & Description
		TRANSFORMER	
T601	SLT5J63	SLT5J63	Transformer, Power Source
		SLT5J97 [XAL] only	Transformer, Power Source
		SWITCH	
S7	ESE372	ESE372	Switch, Voltage Adjuster
		Deletion [XAL] only	.....
		CABINET and CHASSIS PARTS	
1	SGWT8077D1	SGWT8077KE [X, XA, XE, XAL]	Panel, Front Ass'y (Black)
		SGWT8077KD [E, EG, EB, XGH]	Panel, Front Ass'y (Black)
4	SBC199	SBC199-1	Button, Rec Level Check, Active Servo Lock, Muting/FM Mode Switch
6	SBC197-1	SBC197-1	Button, Power Switch
7	SBN775	SBN775-1	Knob, Tuning
20	SHR127	SHR127	Bushing, AC Cord
		SHR129 [XE] only	Bushing, AC Cord

Ref. No.	Change of Part No. ST-8077	→ ST-8077K	Part Name & Description
		RJA23ZC	AC Cord, with Plug
22	RJA23ZC	QFC1208M [XAL] only	AC Cord, with Plug
		RJA45ZC [XE] only	AC Cord
23	SKA10210	SKA10211	Cabinet (Black)
24	SUAT8077D [E] only	SUAT8077KL [XAL]	Chassis, Bottom & Rear Panel
	SUAT8077E	SUAT8077KE [XE]	Chassis, Bottom & Rear Panel
		SUAT8077KX [X, XA, E, EG, EB, XGH]	Chassis, Bottom & Rear Panel
		SCREWS and WASHERS	
⑱	XTB3+8BFN	XTB3+8BFZ	Screw, Cabinet M'tg
		ACCESSORIES	
A4	——	SJP5213-1 [X, XA] only	Plug Adapter
		PACKING PARTS	
P3	SPG1855 [E]	SPG1855	Carton Box
	SPG1857 [XGF]		
	SPG1859 [XGH, EB, EG]	SPG2003 [XE] only	Carton Box

■ PACKINGS



■ ACCESSORIES



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